Transportation

9. Pedestrian facilities - system design and improvements
10. Bicycle facilities - system design and improvements
11. Transit facilities - system design and improvements

Infrastructure

12. Water use - land planning that reduces water consumption.

The results of the pilot study are provided in The INDEX Pilot Test: SPA Air Quality Improvement Plans report prepared by Criterion Planners/Engineers. The pilot study and INDEX modeling demonstrated that the Otay Ranch village design concept results in energy-efficient features that improve air quality and reduce $CO_2$ emissions beyond levels that are found in traditional suburban communities. In the first modeling, Village Six was found to be about 9%, and Village Eleven to be about 11%, more efficient than traditional suburban communities. In order to increase efficiency even more, both villages volunteered to implement additional measures. These measures are described in the AQIP within this SPA Plan.

The Air Pollution Control District is responsible for the Air Quality Maintenance Program in compliance with the California Clean Air Act. There is no local Master Plan for Air Quality. The draft *Air Quality Improvement Plan for the Otay Ranch Village 2, 3, portion of Village 4 SPA* dated, January 24, 2005, was prepared by Hunsaker & Associates.

### 11.5.4.10.3 Threshold Compliance and Recommendations

The City continues to provide a development forecast to the APCD in conformance with the threshold standard. A separate AQIP is provided as part of this SPA Plan.

## II.5.4.11. CIVIC CENTER:

### II.5.4.11.1 CITY THRESHOLD STANDARDS:

There is no adopted threshold standards for these facilities. The facility information is being provided in this report to aid in establishing operational benchmarks which will determine construction phasing of the Civic Center. These facilities are funded through the collection of the DIF fees in effect at the time building permits are issued.

### II.5.4.11.2 SERVICE ANALYSIS:

Although the existing Civic Center successfully accommodated city administration offices prior to the mid-1980's population growth, increase in City staff to meet new demands of growth has caused increasing congestion problems. City staff in the Public Services Building experience space shortages, lack of privacy and storage, and frequent noise distractions. This was reported in a survey, which is included in the Civic Center Master Plan dated May 8, 1989. Site Alternative Three "The Suburban Scheme" was selected from the master plan at a City Council conference on June 22, 1989

### II.5.4.11.3 EXISTING CONDITIONS:

In July of 2001, the final master plan for the renovations to the Civic Center was approved by City Council. Rebuilding the Civic Center will cost approximately $50 million, which will primarily be funded by development fees (89%). The Civic Center Redevelopment is currently underway and expected to be completed in three phases by 2009.

Recently, the new City Hall Redevelopment, or Phase One of the Civic Center Complex, was completed. Phase Two is the gutting and remodeling of the old Police Station for additional offices. Phase Two is currently in process and will be the temporary home of the Planning, Building and Engineering Departments. Phase Three is the re-building of the Public Services Building to be completed by 2008. The fire station will be rebuilt in 2009 with the Ken Lee Bldg and parking lot to be the parking for the complex.

### II.5.4.11.4 ADEQUACY ANALYSIS:

The need for the Civic Center cannot be easily related to population figures or acres of commercial and industrial land, which will be developed in the future. The original facilities, according to the master plan, are inadequate because of the lack of space. This has worsened as employee numbers and their workloads have increased in response to demands for services, which have been generated by new development. Expansion of the Civic Center Complex is currently underway. This expansion included space planning, design, and construction is expected to keep pace with demand for additional work space. City Hall facilities have been renovated and now include a new state of the art Council Chambers. Consistent with the Master Plan, further expansions and renovations include a conversion of the old Police Station to additional office space and re-building of the Public Services Building.

### II.5.4.11.5 FINANCING CIVIC CENTER FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is $5,489/unit, multi-family residential is $5,109/unit, commercial (including office) development is $21,727/acre and industrial development is $4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Civic Center Fee obligation at buildout is $3,446,397 (see Table L.3)

**Table L.3**
**Villages 2, 3, and a Portion of Village 4 SPA**
**Public Facilities Fees For Civic Center**

| Phase | Dwelling Units | | Com'l Acres | Ind. Acres | Civic Center Fee | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SF | MF | | | Single Family $1,223/DU | Multi-Family $1,096/DU | Com'l $4,767/Ac. | Ind. $798/Ac | Total Fee |
| Blue | 160 | 0 | 0.0 | 0.0 | $195,680 | $0 | $0 | $0 | $195,680 |
| Red | 258 | 459 | 0.0 | 0.0 | $315,534 | $503,064 | $0 | $0 | $818,598 |
| Yellow | 327 | 185 | 0.0 | 0.0 | $399,921 | $202,760 | $0 | $0 | $602,681 |
| Green | 196 | 193 | 0.0 | 0.0 | $239,708 | $211,528 | $0 | $0 | $451,236 |
| Orange | 0 | 624 | 0.0 | 0.0 | $0 | $683,904 | $0 | $0 | $683,904 |
| Purple | 45 | 339 | 11.9 | 0.0 | $55,035 | $371,544 | $56,727 | $0 | $483,306 |
| Teal | 0 | 0 | 0.0 | 87.9 | $0 | $0 | $0 | $70,144 | $70,144 |
| Pink | 0 | 0 | 0.0 | 0.0 | $0 | $0 | $0 | $0 | $0 |
| Pink | 0 | 0 | 0.0 | 80.9 | $0 | $0 | $0 | $64,558 | $64,558 |
| Brown | 0 | 0 | 0.0 | 95.6 | $0 | $0 | $0 | $76,289 | $76,289 |
| **Subtotal** | **986** | **1800** | **11.9** | **264.4** | **$1,205,878** | **$1,972,800** | **$56,727** | **$210,991** | **$3,446,397** |
| **Total** | **2786** | | **11.9** | **264.4** | **$1,205,878** | **$1,972,800** | **$56,727** | **$210,991** | **$3,446,397** |

Table L 3 is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

### II.5.4.11.6 THRESHOLD COMPLIANCE AND RECOMMENDATIONS:

Civic Center facilities will be funded through the collection of the public facilities fees at the rate in effect at the time building permits are issued.

## II.5.4.12 CORPORATION YARD

### II.5.4.12.1 THRESHOLD STANDARDS:

There is no adopted threshold standard for this facility. The facility information is being provided in this report to aid the City in establishing operational benchmarks which will determine construction phasing of the corporation yard.

### II.5.4.12.2 SERVICE ANALYSIS:

New development, with its resultant increase in required maintenance services, creates a need for a larger corporation yard. The new 25-acre Corporate Yard is located at 1800 Maxwell Road.

### II.5.4.12.3 EXISTING CONDITIONS:

The new Corporate Yard Facility was previously an SDG&E equipment and repair facility. The city has renovated and added new improvements for the maintenance and repair of city owned equipment. This facility consists of a renovated building that serves as the administration building for the Corporate Yard. Existing shop buildings have been renovated and new shops have been added as well as a new maintenance building. The Corporate Yard includes parking for employees, city vehicles and equipment. In addition, a Bus Wash/Fuel Island/CNG and associated equipment have been added.

### II.5.4.12.4 ADEQUACY ANALYSIS:

The need for a Corporate Yard cannot be easily related to population figures or acres of commercial and industrial land which will be developed in the future. The growth in population, increase in street miles and the expansion of developed areas in Chula Vista, requires more equipment for maintenance as well as more space for storage and the administration of increased numbers of employees. The need for a larger Corporation Yard has been specifically related to new development.

### II.5.4.12.5. FINANCING CORPORATE YARD FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is $5,489/unit, multi-family residential is $5,109/unit, commercial (including office) development is $21,727/acre and industrial development is $4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Corporate Yard Fee obligation at buildout is $1,936,230 (see Table M.1).

| Table M.1<br>Villages 2, 3, Portion of Village 4 SPA<br>Public Facilities Fees For Corporate Yard[37] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phase | Dwelling Units | | Com'l Acres | Ind. Acres | Civic Center Fee | | | | |
| | SF | MF | | | Single Family $717/DU | Multi-Family $479/DU | Com'l $3,318/Ac. | Ind. $1,383/Ac | Total Fee |
| Blue | 160 | 0 | 0.0 | 0.0 | $114,720 | $0 | $0 | $0 | $114,720 |
| Red | 258 | 459 | 0.0 | 0.0 | $184,986 | $219,861 | $0 | $0 | $404,847 |
| Yellow | 327 | 185 | 0.0 | 0.0 | $234,459 | $88,615 | $0 | $0 | $323,074 |
| Green | 196 | 193 | 0.0 | 0.0 | $140,532 | $92,447 | $0 | $0 | $232,979 |
| Orange | 0 | 624 | 0.0 | 0.0 | $0 | $298,896 | $0 | $0 | $298,896 |
| Purple | 45 | 339 | 11.9 | 0.0 | $0 | $162,381 | $39,484 | $0 | $201,865 |
| Teal | 0 | 0 | 0.0 | 87.9 | $0 | 0 | $0 | $119,632 | $119,632 |
| White | 0 | 0 | 0.0 | 0.0 | $0 | 0 | $0 | $0 | $0 |
| Pink | 0 | 0 | 0.0 | 80.9 | $0 | 0 | $0 | $110,105 | $110,105 |
| Brown | 0 | 0 | 0.0 | 95.6 | $0 | 0 | $0 | $130,112 | $130,112 |
| **Subtotal** | **986** | **1800** | **11.9** | **264.4** | **$674,697** | **$862,200** | **$39,484** | **$359,848** | **$1,936,230** |
| **Total** | **2786** | | **11.9** | **264.4** | **$674,697** | **$862,200** | **$39,484** | **$359,848** | **$1,936,230** |

Table M.1 is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change residential densities, industrial acreage or commercial acreages.

### 5.3.12.6. THRESHOLD COMPLIANCE:

Corporate Yard facilities will be funded through the collection of the public facilities fees at the rate in effect at the time building permits are issued.

[37] The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

## 5.3.13. OTHER PUBLIC FACILITIES

### 5.3.13.1. THRESHOLD STANDARD:

There is no adopted threshold standard for these facilities which are part of the Public; Facilities Development Impact Fee Program and include GIS, Mainframe Computer, Telephone System Upgrade, Records Management and Administration. The information regarding these capital items is being provided in this section of the PFFP to aid the City and the Developer in calculating the PFDIF fees to be paid by the project.

### 5.3.13.2. SERVICE ANALYSIS:

The public facilities identified above are described in the report entitled *Development Impact Fee for Public Facilities* dated April 20, 1993, known as document number C093-075.

### 5.3.14.3. EXISTING CONDITIONS:

The City continues to collect funds from building permit issuance in the Eastern Territories for deposit to the accounts associated with other public facilities. These facilities include administration, records management system, telecommunications, computer systems and GIS.

### 5.3.14.4. FINANCING OTHER PUBLIC FACILITIES:

The Public Facilities Development Impact Fee (PFDIF) was updated by the Chula Vista City Council on November 19, 2002 by adoption of Ordinance 2887. The PFDIF was last updated by City Council on May 10, 2005 with approval of Ordinance 3010. The current fee for single-family residential development is $5,489/unit, multi-family residential is $5,109/unit, commercial (including office) development is $21,727/acre and industrial development is $4,044/acre. The PFDIF amount is subject to change as it is amended from time to time. Both residential and non-residential development impact fees apply to the project. The calculations of the PFDIF due for each facility are addressed in the following sections of this report.

The project is within the boundaries of the PFDIF Program and, therefore, the project will be subject to the payment of the fee at the rate in effect at the time building permits are issued. At the current fee rate, the project Other Public Facilities Fee obligations at buildout is $501,620 (see Table N.1)

| Table N.1<br>Villages 2, 3, and a Portion of Village 4 SPA<br>Public Facilities Fees For Other Public Facilities[38] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phase | Dwelling Units | | Com'l Acres | Industrial Acres | Other Public Facilities Fees | | | | |
| | SF | MF | | | Single Family $179/DU | Multi-Family $160/DU | Com'l $698/Ac. | Ind. $109/Ac | Total Fee |
| Blue | 160 | 0 | 0 | 0 | $28,640 | $0 | $0 | $0 | $28,640 |
| Red | 258 | 459 | 0 | 0 | $46,182 | $73,440 | $0 | $0 | $119,622 |
| Yellow | 327 | 185 | 0 | 0 | $58,533 | $29,600 | $0 | $0 | $88,133 |
| Green | 196 | 193 | 0 | 0 | $35,084 | $30,880 | $0 | $0 | $65,964 |
| Orange | 0 | 624 | 0 | 0 | $0 | $99,840 | $0 | $0 | $99,840 |
| Purple | 45 | 339 | 11.9 | 0 | $8,055 | $54,240 | $8,306 | $0 | $70,601 |
| Teal | 0 | 0 | 0 | 87.9 | $0 | $0 | $0 | $9,581 | $9,581 |
| White | 0 | 0 | 0 | 0.0 | $0 | $0 | $0 | $0 | $0 |
| Pink | 0 | 0 | 0 | 80.9 | $0 | $0 | $0 | $8,818 | $8,818 |
| Brown | 0 | 0 | 0 | 95.6 | $0 | $0 | $0 | $10,420 | $10,420 |
| **Subtotal** | **986** | **1800** | **11.9** | **264.4** | **$176,494** | **$288,000** | **$8,306** | **$28,820** | **$501,620** |
| **Total** | **2786** | | **11.9** | **264.4** | **$176,494** | **$288,000** | **$8,306** | **$28,820** | **$501,620** |

Table N.1, is only an estimate. Actual fees may be different. PDIF Fees are subject to change depending upon City Council actions and or Developer actions that change the number of residential units, residential densities, industrial acreage or commercial acreages.

### 5.3.14.5 THRESHOLD COMPLIANCE AND RECOMMENDATIONS:

Other Public Facilities will be funded through the Collection of public facility fees at the rate in effect at the time building permits are issued

[38] The PDIF Fee is subject to change as it is amended from time to time. Changes in the number of dwelling units, Industrial Acreage or Commercial Acreage may affect the estimated fee.

## II.5.4.14 FISCAL ANALYSIS

### II.5.4.14.1 Threshold Standard

1. The GMOC shall be provided with an annual fiscal impact report, which provides an evaluation of the impacts of growth on the City, both in terms of operations and capital improvements. This report should evaluate actual growth over the previous 12-month period, as well as projected growth over the next 12-18 month period, and 3-5 year period.

2 The GMOC shall be provided with an annual "economic monitoring report" which provides an analysis of development impact fees collected and expended over the previous 12-month period.

### II.5.4.14.2 Facility Master Plan

There is no existing Master Plan for fiscal issues. However, an economic base study and a long range fiscal impact study was prepared by P&D Technologies as part of the Chula Vista General Plan.

### II.5.4.14.3 Project Processing Requirements

The SPA Plan and the PFFP are required by the Growth Management Program to prepare a phased fiscal/economic report dealing with revenue vs expenditures including maintenance and operations.

### II.5.4.14.4 Fiscal Analysis of Project

#### II.5.4.14.4.1 Introduction

This section of the PFFP is based upon the Fiscal Impact Analysis as prepared by CIC Research, Inc. dated March 2005. The CIC analysis identifies the estimated fiscal impact that the project will have on the operation and maintenance budgets of the City of Chula Vista (general fund) Information pertaining to the scope of development was derived from the developer and the City.

Two basic methodologies were utilized in estimating public agency revenues and expenditures; the case study and per unit/acre multiplier methods. The case study method was used to estimate secured property tax The case study method is based on specific characteristics of the project from which revenues can be estimated. Appropriate city officials were contacted to identify actual tax rates, fees and costs The per unit/acre multiplier method, which represents a more general approach was utilized to estimate unsecured property tax, sales tax, TOT, property transfer tax, utility tax, license fees, fines, other revenues and fees and all expenditures CIC also utilized input from the fiscal impact prepared for Eastlake III, Eastlake Trails, Otay Ranch Village 6, and San Miguel Ranch. The City of Chula Vista's FY 2003 Budget was utilized to estimate per unit/acre multipliers.

### II.5.4.14.4.2 Project Description

The project is proposed to be developed in the City of Chula Vista and includes approximately 982 single-family units, 1,804 multi-family (including multi-use residential), 260 acres of industrial, 20 acres of retail uses, and 59.6 acres of publicly maintained park at build-out. This fiscal analysis is based on that project scenario. Any alternative project scenarios, additions and/or changes would require further analysis and revisions to this fiscal impact analysis report. Presented in Table O.1 is a description of the product types and projected absorption schedule, both provided by the City and the developer. This schedule includes a 13-year (2005 to 2018) development schedule. For the purpose of this analysis, absorption represents new units being sold and occupied, and commercial and industrial land developed sold and occupied.

Housing market values were estimated by CIC and ranged from approximately $300,000 (multi-family) to $400,000 (single family). The values used in the table represent the estimated average unit price for each type of development. Commercial values were estimated using COMPs (Commercial Property Information Services), DataQuick and previous studies.

### II.5.4.14.4.3 Project Demographics and Land Uses

In developing per unit/acre multipliers, CIC utilized demographic and land use information related to the City of Chula Vista as a whole and, more specifically, the subject project. Included in Table O.2 are population, housing, land-use and infrastructure characteristics. The developer (Otay Ranch Company) provided the number of housing units and acres by land use for the project. In addition, they provided the number of street miles. Lane miles were estimated using the city average. The number of streetlights also represents an estimate and was derived by using the City standard of 350 feet between streetlights.

**Table O.1**
**Otay Ranch Village 2, 3, Portion of Village 4 SPA**
**Absorption Schedule and Market Values by Land Use**

| Land Use | Net Unit Value (000's) | Cumulative Developed and Occupied Net Acres | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2112 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
| SF | $400 | 150 | 300 | 450 | 600 | 750 | 900 | 986 | 986 | 986 | 986 | 986 | 986 | 986 | 986 | 986 |
| MF | $300 | 275 | 550 | 825 | 1,100 | 1,375 | 1,650 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 |
| Total Res. Units | | 425 | 850 | 1,275 | 1,700 | 2,125 | 2,550 | 2,786 | 2,786 | 2,786 | 2,786 | 2,786 | 2,786 | 2,786 | 2,786 | 2,786 |
| Ind Acreage | $2,000 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 264 | 264 |
| Com'l Acreage | $2,000 | | | 7 | 14 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

Source: CIC Research

| Table O.2<br>Project Fiscal Impact<br>General Assumptions | | |
|---|---|---|
| **Chula Vista** | | Sources |
| Population | 217,543 | CV Planning |
| Occupied Housing Units | 62,500 | CA Dept. of Finance |
| Persons Per Household | 3.03 | CA Dept. of Finance |
| Street Miles | 365 | CV Public Works |
| Lane Miles | 1351 | CV Public Works |
| Traffic Signals | 142 | CV Engineering |
| Street Lights | 6,307 | CV Engineering |
| Estimated Avg. HH Income | $55,992 | Claritas, Inc. |
| Median Housing Price | $197,000 | DataQuick Info.Serv. |
| Land Uses (Developed Acres) | | |
| Commercial | 1,404.41 | CV Planning |
| Industrial | 728.29 | CV Planning |
| Residential | 8,226.81 | CV Planning |
| Park | 401.18 | CV Planning |
| | | |
| **Village 2, 3 and portion of Village 4 SPA Project** | | |
| Estimated Population | 8,458 | CIC Research, Inc |
| Housing Units | 2,786 | Otay Ranch Co. |
| Persons Per Household | 3.036 | CV Planning |
| Commercial Retail Acres | 11.9 | Otay Ranch Co. |
| Public Park Acres (including a portion of community park | 59 6 | Otay Ranch Co |
| Street Miles | 15 | Otay Ranch Co /<br>CIC Research, Inc. |
| Lane Miles | 48 | CIC Research, Inc |
| Street lights | 226 | CIC Research, Inc |
| Estimated Avg. HH Income | $75,000 | CIC Research, Inc |
| Median Housing Price | $300,000 | CIC Research, Inc |

Source: CIC Research

### II.5.4.14.4.4 Revenues

Operating revenues for the City of Chula Vista resulting from the development of the proposed project are estimated in this section The major revenue sources which are expected to be generated from the subject developments and detailed in this chapter include property tax (secured and unsecured), property transfer tax, sales tax, franchise fees, TOT, utility tax, license revenue, miscellaneous fines, homeowner's property tax relief, gas tax and charges for various current services The City of Chula Vista's Budget (FY 2003) for these revenue items is detailed in Table O 3 along with allocation rates. The following section details each of the revenue sources and the methodology employed to estimate revenues from the subject developments. For each identified revenue source, a detailed table reflecting the revenue flow over the project build-out (2004 to 2011) is presented in the Appendix of this report. All dollar figures are presented in 2004 dollars (no inflation rates were used).

| Table O.3<br>Project Fiscal Impact<br>Revenue Generation Assumptions | | |
|---|---|---|
| **Revenues** | **City of Chula Vista FY2003 Revenues** | **Allocation Assumption** |
| Property Taxes | | |
| Secured | $13,504,354 | Based on 10.6% of 1% of TAV |
| Unsecured | $655,000 | $312/acre industrial, $301/acre commercial |
| Other Taxes | | |
| Property Transfer Tax | $963,000 | $0.18 annual ave per $1,000 assessed value |
| Sales & Use Tax | $20,353,998 | $234/residential unit, $3,354/acre industrial, $3,570/acre commercial |
| Franchise Fees | $6,935,040 | $41/residential unit,$2,523/acre industrial, $1,802/acre commercial |
| TOT | $2,173,500 | $3/residential unit, $134/acre industrial, $70/acre commercial |
| Utility Tax | $4,170,600 | $25 per residential unit, $1,518/acre industrial, $1,084 /acre commercial |
| Licenses | | |
| Business License | $1,057,417 | $319/acre industrial, $587/acre commercial |
| Other Licenses | $96,614 | $1.50 per residential unit |
| Fines | | |
| Library Fines | $170,000 | $2.72 per residential unit |
| Parking Citations | $312,995 | $3.76 per residential unit, $26/acre industrial, $42/acre commercial |
| Revenues from other Agencies | | |
| Gas Tax | $2,559,533 | $36 per residential unit, $105/acre industrial, $173/acre commercial |

Source: CIC Research

**Secured Property Tax**

Secured property tax revenues generated from the proposed developments were calculated on the basis of a one-percent tax rate on the current market value of the residential, industrial, and commercial development. The subject properties are in tax rate areas 0162. According to the County of San Diego, the City of Chula Vista would receive 10.6 percent of the one-percent of the property taxes collected in those tax rate areas. It should be noted that the citywide average share of property tax is roughly 14.7 percent.

Market values (assessed values) for the residential units were estimated by CIC Research using market data from DataQuick. Market values for commercial and industrial uses were estimated using COMPS, Commercial Property Information Services, Inc., as well as DataQuick and other published materials. These identified market values also represent the assessed values. Although assessed values increase two percent per year and readjust after the property resells, this analysis assumes no inflation and all values remain in 2004 dollars. Included in Tables A-2 in the appendix is the cumulative assessed value over the

build-out of the developments. Total assessed values for the Project range from $182 million during the first year (2005) to $1.5 billion at build-out (2018)

The City of Chula Vista's share of the collected annual property tax is $1.6 million for the project (Table A-3 of the Fiscal Impact Analysis Tables starting on page 159) at build-out

**Unsecured Property Tax**

Unsecured property, which includes personal property such as equipment, inventory, furniture, etc. is taxed for primarily commercial and industrial businesses. CIC utilized the County Assessor's Office estimate of unsecured tax allocation. The County Assessor estimates 65 percent of the unsecured property tax is associated with commercial development and 25 percent is allocated to industrial development. Using the City's budget figure of $650,000 (unsecured tax collect-FY 2003) and an estimated 1,404 acres of commercial development and 728 acres of industrial results in a ratio of $312 per industrial and $301 per commercial acre for the City's share of unsecured property tax.

The study portion of the Project includes 274.6 acres of industrial and roughly 11.9 acres of commercial uses. This would generate an estimated $88,400 in unsecured annual property tax at build-out (refer to Table A-4 in the appendix)

**Property Transfer Tax**

Sales of real property in San Diego County are taxed at a rate of $1.10 per $1,000 of the sales price. Chula Vista would receive 50 percent of the tax. An analysis conducted by the San Diego Association of Governments (SANDAG) indicates that the average turnover rate for residential property is once every seven years and once every 14 years for nonresidential property. The following formulas, which take both the transfer tax formula and the average turnover rate into account, were utilized to yield average annual per unit property transfer tax.

Single Family Residential $\frac{\$.55}{\$1,000}$ X 1/7 = .00007857

Commercial/Industrial $\frac{\$.55}{\$1,000}$ X 1/14 = 00003929

Using these formulas, an estimated annual average property tax can be calculated. The project would generate $96,000 (refer to Table A-5) in average, annual property transfer tax at build-out.

**Sales Tax**

This fiscal impact methodology equates the collection of sales tax to both residential units and commercial and industrial acreage primarily using a demand allocation method. After subtracting the portion of the City's sale tax that represents Mexican and other non-resident shoppers (this is estimated to be 20% based on City of Chula Vista data) The remainder is allocated to local residents and businesses based on an analysis conducted by the City of San Diego's Finance Department and given the study site location and land-use mix, CIC utilized the following tax allocations, 75% for residential, 10% for retail/office commercial, and the remainder (15%) allocated to industrial land uses. The City's share of sales tax generated by the residential portion of the study property is based on $234 per household per year. This is derived by using 75 percent of the total sales tax collection in the City of Chula Vista, divided by the number of housing units and adjusted roughly 10 percent to

reflect the assumed higher household income in the new development versus the overall City average based on the housing cost differential. Retail sales taxes for commercial land was based on 10% of the City's sales tax divided by commercial acreage and an estimate of additional sales tax generated from the new commercial (conservatively estimated to be approximately 21 cents a square foot of retail sales space). The total of both of those which resulted in a multiplier of $3,570 per acre of retail commercial. Sales tax allocated to industrial land uses amount to $3,354 per acre based on the previous mentioned formula. Total annual sales tax generated by the Project is estimated at $1.6 million at build-out (refer to Table A-6 in the appendix)

**Franchise Fees**

The City of Chula Vista receives a franchise tax fee from sales of natural gas, electricity, cable television and trash collection. Using the sale of gas and electricity as a guideline and based on a study prepared by San Diego Gas and Electric (SDG&E), 37 percent of the franchise fees are attributed to residential uses, 36.5 percent to retail/office uses and the remaining 26.5 percent is attributed to industrial uses. Using these guidelines, the city budget, area demographics and land use information results in an estimated $41 in annual franchise fees per housing unit, $2,523 per developed industrial acre and $1,802 per developed commercial acre. Utilizing these ratios results in a total annual franchise fee of $161,100 for the Project (see Table A-7) at build-out.

**Transient Occupancy Tax**

Transient occupancy tax (TOT) is a tax added to the price charged for the use of a hotel or motel room. The majority of the tax is associated with new hotel developments. Since there is no planned hotel/motel development in this project, TOT would be generated by the residents and commercial retail enterprises by their use of local hotels/motels. The San Diego Convention and Visitors Bureau estimates that of all visitors who stay in hotels and motels, eight percent are visiting friends or relatives and an additional nine-percent are in San Diego on non-convention business. Utilizing the City's 2000/01 budget for TOT of $2,064,000 and assuming eight percent is generated by residential land uses and nine percent by non-residential uses (assume 50% retail and 50% industrial uses), results in multiplier ratios of roughly $3 per housing unit, $134 per industrial acre, and $70 per commercial acre. Using these ratios and the estimate of TOT generated by the tourist commercial, the City of Chula Vista will receive a total annual TOT tax of $45,100 associated with the Project (refer to Table A-8).

**Utility Users' Tax**

The City of Chula Vista's FY2002/03 budget for utility taxes is $3,170,600. These taxes are paid by the residents on gas, electric and telephone services. CIC utilized the same methodology for utility taxes and franchise fees. Using the land use allocation of 79 percent residential uses, 14 percent to retail/office uses and 7 percent to industrial uses, results in an estimated $25 in annual utility tax per housing unit, $1,518 per developed Industrial acre, and $1,084 per developed commercial acre. These ratios result in a total annual utility tax of $377,500 for the Project (refer to Table A-9) at build-out.

**Business License Fees**

Business license fees are allocated based on a survey reported by the City of San Diego's Financial Management Department, which indicated that 78 percent of the fees were generated by commercial uses and 22 percent were generated by industrial uses. Using the City of Chula Vista's budget ($1,057,417), the above proportions and the number of citywide developed commercial acres, results in multipliers of $319 per industrial and $587

per commercial acre. Using these multipliers, total business license fees attributed to Project are $166,700 per year at build-out (refer to Table A-10).

**Miscellaneous Revenues**

CIC grouped numerous revenues into the category of miscellaneous. These revenues include: animal licenses, bicycle licenses, State homeowners property tax relief, gas tax, library fines, parking citations, swimming pool fees, recreation programs and park reservation fees. With the exception of gas tax and parking citations, all the revenues are assumed to be allocated entirely to residential uses. For these revenues, multipliers were developed by dividing the total revenues by the total number of citywide occupied housing units, commercial and industrial acreage. Total miscellaneous revenues attributed to the Project are $213,200 per year at build-out (refer to Table A-11). The allocation of gas tax and parking citations was calculated as follows:

**Gasoline Tax**

Gasoline tax revenue accrues on the basis of a complicated formula utilizing county to state and incorporated to unincorporated portion of population. According to the City of San Diego's "Fiscal Impact of New Development" and the Department of Motor Vehicle's auto registration records, an estimated 50 percent is attributed to residential uses and the remaining 50 percent is allocated based on vehicle registration (75% residential, 19% commercial and 6% industrial).

**Parking Citations**

Parking violation revenues were allocated by vehicle registration classification as estimated by the Department of Motor Vehicles (75% residential, 19% commercial and 6% industrial).

### II.5.4.14.4.5 Operating Expenditures

Operating expenditures for the City of Chula Vista resulting from development of the Project are outlined in this section. The expenditure categories to be impacted by the subject developments include administration overhead, planning, police, fire, library, public works and parks and recreation. The City of Chula Vista's operating expenditure budgets for fiscal year 2000/01 and allocation assumptions are presented in Table O.4. These expenses are utilized in estimating per unit/acre expenditures for the project. The methodologies used to estimate project expenses are discussed in more detail in the following sections. Similar to the revenue analysis, all figures shown are in current (2004) dollars. The projection of costs in this analysis assumes no significant or predictable changes in the service standards of the City of Chula Vista. Detailed tables reflecting the annual expenditure cash flows are presented in the appendix to this report.

| Table O.4<br>Project Fiscal Impact<br>Cost Allocation Assumptions | | |
|---|---|---|
| **Expenditures** | **City of Chula Vista FY2002/03 Expenditures** | **Allocation Assumptions** |
| **OVERHEAD FUNCTIONS** | | |
| **Administration Overhead** | **$19,277,325** | |
| City Council | $757,019 | |
| Boards and Commission | $10,210 | |
| City Attorney | $1,653,273 | |
| City Clerk | $657,312 | |
| Admin | $5,446,562 | |
| Management | $2,906,257 | |
| Human Resources | $3,440,094 | |
| Finance | $2,256,166 | |
| Non-Dept | $2,150,432 | |
| | | |
| **Public Works** | **$2,804,320** | |
| Building Maintenance | $1,075,019 | |
| Custodial Maintenance | $1,351,112 | |
| Communications | $378,189 | |
| **TOTAL OVERHEAD** | **$22,081,645** | **Based on 26.2% of Line Operations** |
| | | |
| **LINE OPERATIONS** | | |
| Planning (non current) | $1,750,367 | $22/residential unit, $169/acre commercial and industrial |
| Community Development | $2,408,520 | N/A |
| Police | $32,580,130 | $381/residential unit, $1,819/acre industrial, $5,319/acre commercial |
| Fire | $10,271,309 | $164/residential unit, $573/acre industrial, $$1,677/acre commercial |
| Building and Housing | $1,042,580 | N/A-Cost Reimburse |
| Library | $7,395,347 | $118 per residential unit |
| | | |

| Table O.4 continued<br>Project Fiscal Impact<br>Cost Allocation Assumptions | | |
|---|---|---|
| **Expenditures** | **City of Chula Vista FY2002/03 Expenditures** | **Allocation Assumptions** |
| **OPERATIONS** | | |
| **Public Works** | **$17,960,124** | |
| Operations | | |
| Operations Administration | $1,656,815 | $24/residential unit, $180/acre commercial and residential |
| Traffic Operations | $801,733 | $593 per lane mile |
| Street Maint (1) | $1,767,339 | $1308 per lane mile |
| Street Sweeping | $295,968 | $200 per lane mile |
| Street Tree Maint | $859,876 | $2,356 per street mile |
| Wastewater Maint. | $3,717,689 | Self supporting |
| | | |
| **Engineering** | | |
| Traffic Signl/Lights Maint. | $1,432,797 | $4,036 per signal, $136 per street light |
| | | |
| **Parks** | **$7,783,023** | **$2,296 per park acre** |
| Admin-Parks | $315,164 | |
| Admin-Open Space | $480,646 | Provided by lighting/landscape district |
| Maintenance | $3,202,441 | |
| **Recreation** | **$3,784,772** | **$54 per residential unit** |
| Aquatics & Athletics | $911,781 | |
| Senior and Youth | $372,094 | |
| General Recreation | $2,976,142 | |
| Administration | $524,754 | |
| **TOTAL LINE OPERATIONS(3)** | **$84,976,172** | |
| | | |
| **TOTAL EXPENDITURES** | **$102,415,863** | |

(1) Estimated at 20% in year 5, 40% in year 6, to 100% in year 9
(2) Slurry seal will occur after 3 years then every 7 years (residential streets), chip seal after 3 years then every 7 (major streets)
(3) Includes all planning expenses and all public works reimbursable and CIP
(4) Includes all planning expenses and all public works admin

Source: CIC Research

**Government Administration**

The total costs for city administration services projected in FY 2002/2003 are $22,081,645 , as shown in Table O.4. In order to allocate these overhead expenses to the projects, CIC assumed the City cost for the subject developments would incur an overhead rate similar to the City of Chula Vista (city administration overhead ÷ total line operations expenditures=26.2%). Table A-12 in the appendix shows annual overhead expenditures for the Project ($830,500) at build-out.

**Planning (Non-Current)**

Non-current planning costs are allocated based on the City of Chula Vista's land use allocation (79% residential, 7% residential and 14% commercial/office) and the number of housing units in the city and developed commercial and industrial acreage. Utilizing these proportions results in multipliers of $22 per housing unit, $169 per commercial and industrial acre. These multipliers translate into annual planning (non-current) costs of $109,900 for the Project (refer to Table A-13).

**Police**

The Chula Vista Police Department will provide police protection for the projects. CIC contacted representatives of the local police department to obtain information on service calls and beat activity attributable to residential, business and industrial land uses. No information was available regarding the nature of local calls and regular beat activity. As a result, CIC utilized City of San Diego's cost allocation by land use from the City of San Diego's "Fiscal Impact Model of New Development".

The San Diego Police Department estimates that calls for service account for roughly 50 percent of their expenditures. They are distributed as follows: 66.6% in or around residential structures, 32.3% in or around commercial structures and 1.1% associated with industrial structures. The other 50 percent of expenditures are attributed to normal "beat" activity, and are allocated in proportion to land use acreage (79% to residential land use, 7% to industrial land use, and 14% to commercial land use). Averaging the percentages for both service-call activity and "beat" activity yields the following per unit allocations for police service in Chula Vista (see Table O.5).

**Table O.5**
**Per Unit Allocations for Police Service**

| Land Use | Combined Percent of Budget Allocation | Estimated Per Unit Expenditures |
|---|---|---|
| Residential | 73% | $381/housing unit |
| Industrial | 4% | $1,819/acre |
| Commercial/Office | 23% | $5,319/acre |

Source: CIC Research

The above estimates are based upon a FY 2003 police budget of $33 million and results in annual police costs of $1,646,700 for Project (refer to Table A-14) at build-out.

**Fire Protection**

As previously mentioned, Project includes a moderate amount of open space. Fire protection for the open space will be provided by the Chula Vista Fire Department. According to the Chula Vista Fire Department, the City experiences very few brush fires compared to other service calls. However, the potential for a large brush fire does exist and the City could incur extra costs, which are not covered in the State Master Mutual-Aid Agreement.

The proposed urban uses form the basis for allocating fire costs to the Project. The Chula Vista Fire Department also provided CIC with a breakdown of calls for fire protection service in 1997; residential uses 84.2%, commercial uses 14.3% and industrial uses 1.5%. Based on these allocations for fire protection service, the following per unit costs were developed for the project, which results in annual fire protection costs of $642,700 for the

Project (refer to Table A-15) It should be noted that these costs do not include any extraordinary expenses for large brush fires.

**Paramedic Services**

The City of Chula Vista contracts privately with American Medical Response Group to provide paramedic services. Services are charged on a fee for service basis, at no resulting cost to the City. Therefore, the project will not incur any current paramedic expenses and no expense category is shown in the expenditure cash flow analysis for this service. It should be noted that at some future time, the City could be asked to help fund costs associated with a new paramedic unit to handle future eastern growth.

**Library Services**

For past studies, CIC Research contacted the Chula Vista Library's Director, Mr. David Palmer regarding allocations by land use for new development's impact on library services. He was able to provide CIC with a breakdown of resident versus nonresident patronage. In fiscal year 1996/1997, 37 percent of local library use (three branches) was by nonresidents of the community. Alternatively, 63 percent of library use was by residents. Since the library is primarily a local resource used by residents as opposed to businesses, the entire budget is allocated to residential uses.

In the FY 2003 proposed budget, total library costs are estimated at $7,395,347, which calculates to a multiplier of $118 per housing unit. Total annual library costs associated with the Project are $329,700 (refer to Table A-16) at build-out.

**Public Works**

The Public Works Department has a proposed FY 2003 budget of $17,530,000 (this figure excludes some overhead costs, which were included in overhead functions). The Public Works Department is divided into operations and engineering. Mr. David Byers (Deputy Director of Public Works/Operations) assisted CIC in allocating operation costs for a previous study. Building maintenance, custodial maintenance and communications were included in City overhead functions. Operations' administration costs were allocated based on developed acreage proportions and housing units. The other operation costs were allocated on a per street or lane mile basis. As presented in Table O-2, the City of Chula Vista includes 365 street miles and 1,351 lane miles. The Project is estimated to include 15 street miles and 48 lane miles at build-out. Approximately 33% of the lane miles would be on major roads while the remainder would be residential. Per Mr. Byers' suggestion, CIC included three (Overlay Program, Sidewalk Maint. and Pavement Rehab.) expenditure categories which represent operating costs but were included in CIP programs. Pavement rehabilitation costs were based on $.07 per square foot for slurry seal and $.12 per square foot for chip seal and allocated to the lane miles in the proposed projects. All of the operation costs begin in year one with the exception of street maintenance (begins in year 5 at 20% and adds 20% each year to year 9), slurry seal and chip seal (begin in year 3 and then every 7 years). Slurry seal costs were allocated to residential streets and chip seal costs were applied to the heavy traffic, major streets.

Mr. Cliff Swanson (Deputy Director of Public Works/City Engineering) assisted CIC in allocating public works engineering costs for a previous study. Numerous engineering costs are entirely or partially self funded with fees. The entire engineering administration and a portion of construction inspection and GIS costs were allocated based on citywide land-use acres and housing units. Traffic signal and street light operations and maintenance costs were allocated based on the number of citywide signals and street lights (142 signals

and 6,307 street lights) and estimated project signals and lights (0 signals and 226 street lights) The estimated numbers of streetlights in the projects were calculated based on the City standard of one light per 350 feet

Using the identified ratios and multipliers result in a total annual public works cost of $204,300 for the Project at build-out (refer to Table A-17) Because of the length of the presented building schedule, these figures include average annual (15 year) estimates for street maintenance, slurry seal and chip seal costs, which occur infrequently or are phased in, as is the case with street maintenance Because these street maintenance costs will occur infrequently or possibly be delayed depending on conditions, the public works cost will be less in some years and more in other years

**Parks and Recreation Services**

The City of Chula Vista's FY 2003 proposed park and recreation budget is $5,644,290 CIC Research contacted Mr Jerry Foncerrada with the Chula Vista Parks and Recreation Department for a previous study He indicated that close to 100 percent of the department's expenditures go towards the local residential community The public works department handles the maintenance of city parks and provided park maintenance costs of $2,296 per public park acre CIC allocated the park cost on a per acre (1,708 citywide and 37 5 acres for the Project) basis, using all of the proposed neighborhood parks and half of the proposed community park land in the project Recreation costs were allocated on a per housing unit basis

Annual park maintenance costs allocated to the Project are estimated at $85,100 at build-out Costs for recreation services total $54 per housing unit Using this multiplier, results in recreation costs of $151,500 for the Project (refer to Table A-18)

### II.5.4.14.6 Net Fiscal Impact

Utilizing the previously mentioned methodologies estimated net fiscal impacts are presented in Tables O.6 As previously mentioned, all values are in 2004 dollars No annual adjustments to revenues or costs were utilized The estimated annual flows of costs and revenues are primarily related to the estimated project absorption and street maintenance schedules

Table 6 presents the results of the fiscal impact associated with the Project Fiscal revenues range from $472,700 in the first year of development (2005) to $4,355,700 at build-out (2018) Fiscal expenditures range from $490,700 in year one to $4,000,500 at build-out The net fiscal impact from developing the Project is negative in year one ($17,900 loss) and does not become positive until 2014 ($69,200) At build-out, the net fiscal impact is estimated to be $355,100 Using a net interest rate of two percent (interest minus inflation), the project has a positive total impact, even including the negative impact years, from the year 2018 on

## Table O.6
## Net Fiscal Impact of the Project
## On The City Of Chula Vista

| Revenue Sources | Revenues (In Thousands) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Secured Property Tax | $193.5 | $386.9 | $597.4 | $807.9 | $1,016.0 | $1,209.5 | $1,336.0 | $1,378.4 | $1,420.8 | $1,463.2 | $1,505.6 | $1,548.0 | $1,590.4 | $1,598.9 |
| Unsecured Property Tax | $6.2 | $12.5 | $20.8 | $29.2 | $37.2 | $43.5 | $49.7 | $55.9 | $62.2 | $68.4 | $74.7 | $80.9 | $87.1 | $88.4 |
| Property Transfer Tax | $12.8 | $25.5 | $38.9 | $52.3 | $65.6 | $78.4 | $86.2 | $87.8 | $89.4 | $90.9 | $92.5 | $94.1 | $95.7 | $96.0 |
| Sales & Use Tax | $166.5 | $333.1 | $524.6 | $716.1 | $904.1 | $1,070.6 | $1,192.9 | $1,260.0 | $1,327.0 | $1,394.1 | $1,461.2 | $1,528.3 | $1,595.4 | $1,608.8 |
| Franchise Tax | $18.2 | $36.5 | $67.3 | $98.2 | $127.3 | $145.5 | $156.0 | $156.8 | $157.6 | $158.5 | $159.3 | $160.1 | $160.9 | $161.1 |
| TOT Tax | $4.0 | $7.9 | $12.4 | $16.8 | $21.2 | $25.1 | $28.5 | $31.2 | $33.9 | $36.6 | $39.2 | $41.9 | $44.6 | $45.1 |
| Utility Tax | $32.3 | $64.6 | $104.5 | $144.4 | $183.2 | $215.5 | $243.1 | $264.8 | $286.5 | $308.1 | $329.8 | $351.5 | $373.2 | $377.5 |
| Business License | $11.7 | $23.5 | $39.3 | $55.2 | $70.4 | $82.2 | $93.9 | $105.7 | $117.4 | $129.1 | $140.9 | $152.6 | $164.4 | $166.7 |
| Miscellaneous Revenues | $27.5 | $55.0 | $84.0 | $113.0 | $141.8 | $169.3 | $186.5 | $190.8 | $195.1 | $199.4 | $203.7 | $208.0 | $212.3 | $213.2 |
| **TOTAL REVENUES** | **$472.7** | **$945.5** | **$1,489.3** | **$2,033.1** | **$2,566.8** | **$3,039.5** | **$3,372.8** | **$3,531.4** | **$3,689.9** | **$3,848.4** | **$4,006.9** | **$4,165.4** | **$4,324.0** | **$4,355.7** |

| Expenditure Sources | Expenditures (In Thousands) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Government Admin. | $101.9 | $204.0 | $324.3 | $441.1 | $561.1 | $668.0 | $735.8 | $755.9 | $770.2 | $784.6 | $798.9 | $813.3 | $827.7 | $830.5 |
| Planning | $12.8 | $25.7 | $39.7 | $53.7 | $67.5 | $80.4 | $89.0 | $92.4 | $95.8 | $99.1 | $102.5 | $105.9 | $109.3 | $109.9 |
| Police | $198.1 | $396.2 | $631.6 | $866.9 | $1,096.9 | $1,295.1 | $1,421.2 | $1,457.6 | $1,494.0 | $1,530.4 | $1,566.7 | $1,603.1 | $1,639.5 | $1,646.7 |
| Fire | $81.3 | $162.6 | $255.7 | $348.7 | $440.1 | $521.4 | $571.7 | $583.1 | $594.6 | $606.1 | $617.5 | $629.0 | $640.5 | $642.7 |
| Library | $50.3 | $100.6 | $150.9 | $201.2 | $251.4 | $301.7 | $329.7 | $329.7 | $329.7 | $329.7 | $329.7 | $329.7 | $329.7 | $329.7 |
| Public Works | $23.1 | $47.5 | $73.5 | $100.6 | $135.5 | $161.6 | $178.3 | $185.6 | $189.2 | $192.8 | $196.4 | $200.0 | $203.6 | $204.3 |
| Park and Recreation | $23.1 | $46.2 | $86.3 | $112.4 | $150.2 | $189.4 | $218.3 | $236.6 | $236.6 | $236.6 | $236.6 | $236.6 | $236.6 | $236.6 |
| **TOTAL EXPENDITURES** | **$490.7** | **$982.9** | **$1,561.9** | **$2,124.5** | **$2,702.8** | **$3,217.6** | **$3,544.0** | **$3,640.8** | **$3,710.0** | **$3,779.2** | **$3,848.3** | **$3,917.5** | **$3,986.7** | **$4,000.5** |

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL REVENUES | $472.7 | $945.5 | $1,489.3 | $2,033.1 | $2,566.8 | $3,039.5 | $3,372.8 | $3,531.4 | $3,689.9 | $3,848.4 | $4,006.9 | $4,165.4 | $4,324.0 | $4,355.7 |
| TOTAL EXPENDITURES | $490.7 | $982.9 | $1,561.9 | $2,124.5 | $2,702.8 | $3,217.6 | $3,544.0 | $3,640.8 | $3,710.0 | $3,779.2 | $3,848.3 | $3,917.5 | $3,986.7 | $4,000.5 |
| **NET FISCAL IMPACT** | **($17.9)** | **($37.4)** | **($72.6)** | **($91.4)** | **($136.0)** | **($178.0)** | **($171.1)** | **($109.4)** | **($20.1)** | **$69.2** | **$158.6** | **$247.9** | **$337.3** | **$355.1** |

Source: CIC Research, Inc.

## 4.1 PUBLIC FACILITY FINANCE

### 4.1.1 Overview

The City will ensure the appropriate public facilities financing mechanisms are utilized to fund the acquisition, construction and maintenance of public facilities required to support the planned development of the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA project in compliance with the City's Growth Management Program.

Public facilities are generally provided or financed in one of the following three ways:

| | |
|---|---|
| 1. Subdivision Exaction: | Developer constructed and financed as a condition of project approval. |
| 2. Development Impact Fee: | Funded through the collection of an impact fee. Constructed by the public agency or developer constructed with a reimbursement or credit against specific fees. |
| 3. Debt Financing: | Funded using one of several debt finance mechanisms. Constructed by the public agency or developer. |

It is anticipated that all three methods will be utilized for the Otay Ranch Village 2, 3, and a Portion of Village 4 SPA project to construct and finance public facilities

### 4.1.2 Subdivision Exactions

Neighborhood level public improvements will be developed simultaneously with related residential and non-residential subdivisions. Through the Subdivision Map Act, it is the responsibility of the developer to provide for all local street, utility and recreation improvements. The use of subdivision conditions and exactions, where appropriate, will insure that the construction of neighborhood facilities is timed with actual development.

The imposition of subdivision conditions and exactions does not preclude the use of other public facilities financing mechanisms to finance the public improvement, when appropriate.

### 4.1.3 Development Impact Fee Programs

Development Impact Fees are imposed by various governmental agencies, consistant with State law, to contribute to the financing of capital facilities improvements within the City of Chula Vista. The distinguishing factor between a fee and a subdivision exaction is that exactions are requested of a specific developer for a specific project whereas fees are levied on all development projects throughout the City or benefit area pursuant to an established formula and in compliance with State law.

Otay Ranch Village 2, 3, and a Portion of Village 4 SPA , through policy decisions of the City of Chula Vista and other governing agencies, is subject to fees established to help defray the cost of facilities that benefit the project and areas beyond this specific project. These fees may include but not be limited to:

1. Eastern Chula Vista TDIF — established to provide financing for circulation element road projects of regional significance in the area east of I-805.
2. Traffic Signal Fee — to pay for traffic signals associated with circulation element streets.
3. Public Facilities Development Impact Fee — Public Facilities DIF established to collect funds for Civic Center Facilities, Police Facilities, Corporation Yard, Libraries, Fire Suppression System, Geographical Information System (GIS), Mainframe Computer, Telephone System Upgrade, Records Management System and Recreation.
4. Park Acquisition and Development Fee — PAD Fee established to pay for the acquisition and development of park facilities.
5. Poggi Canyon Sewer Basin Development Impact Fee — to pay for constructing sewer improvements within the Poggi Canyon basin.
6. Salt Creek Basin Development Impact Fee — to pay for constructing sewer improvements within the Salt Creek basin.
7. Otay Water District Fees — It should be noted that the Water District may require the formation of or annexation to an existing improvement district or creation of some other finance mechanism which may result in specific fees being waived.

### 4.1.4 Debt Finance Programs

The City of Chula Vista has used assessment districts to finance a number of street improvements, as well as sewer and drainage facilities. Both school districts have implemented Mello-Roos Community Facilities Districts to finance school facilities.

**Assessment Districts**

Special assessment districts may be proposed for the purpose of acquiring, constructing, maintaining certain public improvements under the Municipal Improvement Act of 1913, the Improvement Bond Act of 1915, the Benefit Assessment Act of 1982, and the Lighting and Landscape Act of 1972. The general administration of the special assessment district is the responsibility of the public agency.

Special assessment financing may be appropriate when the value or benefit of the public facility can be assigned to a specific property. Assessments are levied in specific amounts against each individual property on the basis of relative benefit. Special assessments may be used for both publicly dedicated on-site and off-site improvements and maintenance.

As a matter of policy, the City limits the type of improvements which can be financed by assessment district bonding in residential projects. This policy applies to backbone infrastructure including streets, water, sewer, storm drain, and dry utility systems. Such improvements are generally limited to collector streets and larger street systems serving entire neighborhood areas or larger.

**Mello-Roos Community Facilities Act of 1982**

The Mello-Roos Community Facilities Act of 1982 authorizes formation of community facilities districts, which impose special taxes to provide the financing of certain public facilities or services. Facilities that can be provided under the Mello-Roos Act include the purchase, construction, expansion, or rehabilitation of the following:

1. Local park, recreation, or parkway facilities;
2. Elementary and secondary school sites and structures;
3. Libraries;
4. Any other governmental facilities that legislative bodies are authorized to construct, own or operate including certain improvements to private property

### 4.1.5 Other Methods Used to Finance Facilities

**General Fund**

The City of Chula Vista's general fund pays for many public services throughout the City. Those facilities and services identified as being funded by general fund sources represent those that will benefit not only the residents of the proposed project, but also Chula Vista residents throughout the City. In most cases, other financing mechanisms are available to initially construct or provide the facility or service, then general fund monies would only be expected to fund the maintenance costs once the facility is accepted by the City.

**State and Federal Funding**

Although rarely available to fund an entire project. Federal and State financial and technical assistance programs have been available to public agencies, in particular the public school districts.

**Dedications**

Dedication of sites by developers for public capital facilities is a common financing tool used by many cities. In the case of the project , the following public sites are proposed to be dedicated:

1. Roads (if public)
2. Open space and public trail systems

**Homeowners Associations**

One or more Community Homeowner Associations may be established by the developer to manage, operate and maintain private facilities and common areas within the project.

**Developer Reimbursement Agreements**

Certain facilities that are off-site of project and/or provide regional benefits may be constructed in conjunction with the development of the project. In such instances, developer reimbursement agreements will be executed to provide for a future payback to the developer for the additional cost of these facilities. Future developments are required to pay back their fair share of the costs for the shared facility when development occurs.

**Special Agreements/Development Agreement**

This category includes special development programs for financing construction of Telegraph Canyon Road and State Route 125. It also includes any other special arrangements between the City and the developer such as credits against fees, waiver of fees, or charges for the construction of specific facilities.

A development agreement can play an essential role in the implementation of the Public Facilities Financing Plan. The Public Facilities Financing Plan clearly details all public facility responsibilities and assures that the construction of all necessary public improvements will be appropriately phased with actual development, while the development agreement identifies the obligations and requirements of both parties.

### 4.1.6 Public Facility Finance Policies

The following finance policies were included and approved with the Growth Management Program to maintain a financial management system that will be implemented consistently when considering future development applications. These policies will enable the City to effectively manage its fiscal resources in response to the demands placed on the City by future growth.

1. Prior to receiving final approval, developers shall demonstrate and guarantee that compliance is maintained with the City's adopted threshold standards.

2. The Capital Improvement Program Budget will be consistent with the goals and objectives of the Growth Management Program. The Capital Improvement Program Budget establishes the timing for funding of all fee related public improvements.

3. The priority and timing of public facility improvements identified in the various City fee programs shall be made at the sole discretion of the City Council.

4. Priority for funding from the City's various fee programs shall be given to those projects which facilitate the logical extension or provision of public facilities as defined in the Growth Management Program.

5. Fee credits, reimbursement agreements, developer agreements or public financing mechanisms shall be considered only when it is in the public interest to use them or these financing methods are needed to rectify an existing facility threshold deficiency. Such action shall not induce growth by prematurely extending or upgrading public facilities.

6. All fee credit arrangements or reimbursement agreements will be made based upon the City's plans for the timing and funding of public facilities contained in the Capital Improvement Program Budget.

7. Public facility improvements made ahead of the City's plans to construct the facilities will result in the need for additional operating and maintenance funds. Therefore all such costs associated with the facility construction shall become the responsibility of the developer until such time as the City had previously planned the facility improvement to be made.

### 4.1.7 Cumulative Debt

The City of Chula Vista has an established policy limiting the maximum debt to be placed on a residential dwelling unit to an additional one percent above the property tax. This policy was restated in the adopted Growth Management Program.

Like many other cities, Chula Vista has long understood that it is not the only agency that can utilize public finance mechanisms and, therefore, cannot always guarantee that the total debt will remain at or below a maximum of 2 percent. As a result, the City makes an effort to coordinate its debt finance programs with the other special districts (schools and water), which provide service to the residents of Chula Vista to ensure that the cumulative debt does not become excessive. Coordination is also necessary to guarantee all public facilities needed to support a development can be financed and constructed as needed.

Debt capacity is found by totaling the assessed value of residential and commercial/industrial property and applying to this total two percent rate cap established by City policy as can be seen in Table P.1. Subtracting from this total assessed value the value of taxes resulting from application of the effective property tax rate as determined by the County Tax Collector (1.03486%) produces the revenue available from indebtedness that could be placed on the property.

Table P.2. identifies $33,000,000 as the estimated cost of facilities that may qualify for debt financing. This amount is about the same as the first alternative interest cost and bond term example but greater than any of the other alternative interest cost and bond term examples identified on the following page. Using the alternative of 5.0% net interest cost (NIC) and 30 year bond term applied to a conservative $2 million in available annual debt service allows for the financing of approximately $30 million in eligible improvements. Therefore, there appears to be sufficient/insufficient revenue capacity available to finance the improvements listed, although additional analysis will be required at the time of the first utilization of debt financing in the SPA.

The Public Works Department generally requires the preparation of an assessment district feasibility plan for the build-out of a master planned community prior to initiation of the first assessment district in order to determine the debt capacity limits and benefit zones related to using public financing to fund infrastructure improvements.

**Table P.1**
**Estimated Revenue Available for Debt Service on Land Secured Financings**

| Acres | Assessed Value/Unit or Acre | FAR[39] | Total AV |
|---|---|---|---|
| 986 Single Family Units | $400,000 | N/A | $394,400,000 |
| 1800 Multi-Family Units | $300,000 | N/A | $540,000,000 |
| 11.9 Commercial Acres | $2,300,000 | N/A | $46,000,000 |
| 264.4 Industrial Acres | $2,000,000 | N/A | $528,800,000 |
| | | **Total Assessed Value** | $1,509,200,000 |
| | | 2.0% Tax Rate Cap by City Policy | $30,184,000 |
| | | 1.0732% Tax Rate Utilized | $16,196,734 |
| **Annual revenue available to pay debt service @ 2.00% - 1.0732%** | | | $13,987,266 |

[39] Floor Area Ratio. Used as a percentage to calculate building square footage from parcel acreage.

Using $2 million as a conservative amount available for annual debt service and varying the net interest cost (NIC) and term of bond, the following public facility costs could be funded through a financing vehicle such as Mello-Roos and special assessment districts bonds

- A 5.0% (NIC) and 30 year term will fund approximately $31 million.
- A 5.5% (NIC) and 30 year term will fund approximately $29 million.
- A 6.5% (NIC) and 25 year term will fund approximately $24 million.
- A 6.5% (NIC) and 20 year term will fund approximately $22 million.
- A 7.5% (NIC) and 25 year term will fund approximately $22 million.
- A 7.5% (NIC) and 20 year term will fund approximately $20 million.

**TABLE P.2**
**Preliminary Estimate of Facilities Cost**
**Potentially Funded from Debt Service**[40]

| Facility | Segment | Estimated Costs[41] |
|---|---|---|
| **A.** | Heritage Road between Olympic Parkway and Street "D" | **$2,000,000** |
| **B.** | Heritage Road: Santa Victoria (Street "D") to Santa Lisa (St "F") | **$1,100,000** |
| **C.** | Heritage Road: Santa Lisa (Street "F") to Street "J" North | **$2,800,000** |
| **D.** | Heritage Road: Street "J" North to Street "J" South[2] | **$2,200,000** |
| **E.** | Heritage Road: Street "J" South to Main Street | **$1,750,000** |
| **F.** | Main Street: Heritage Road to connect to existing improvements | **$1,500,000** |
| **G.** | Santa Victoria (Street "D"): Olympic Parkway to Heritage Rd. | **$3,000,000** |
| **H.** | Santa Diana (Street "E"): Santa Victoria (Street "D") to State St. | **$2,200,000** |
| **I.** | La Media Road: Santa Venetia to Birch Road | **$2,000,000** |
| **J.** | State Street (St. "E"): Santa Victoria (St. "B") to La Media Rd. | **$650,000** |
| **K.** | La Media Road: Birch Road to Park P-4 Entrance | **$5,800,000** |
| **L.** | Rock Mountain Rd: East of Heritage Rd and/or Main St within the SPA | **$3,300,000** |
| **M.** | Santa Victoria (Street "D"): State Street to Heritage Road. | **$3,000,000** |
| **N.** | Santa Victoria (Street "B"): Santa Venetia to State Street. | **$1,200,000** |
| **O.** | Santa Victoria (Street "D"): Heritage Road to Santa Diana (Street "E") | **$500,000** |
| **Total Costs** | | **$33,000,000** |

[40] Estimate is subject to change based on detailed construction cost estimates

[41] Cost estimates were based on the City of Chula Vistas "Eastern Area Development Impact Fees for Streets, dated July 2002 by Wildan.

### 4.1.8 Lifecycle Cost

Section 19.09.060 Analysis subsection F(2) of the Growth Management Ordinance requires the following:

> "...The inventory shall include Life Cycle Cost ("LCC") projections for each element in 19.09.060(E)...as they pertain to City fiscal responsibility. The LCC projections shall be for estimated life cycle for each element analyzed. The model used shall be able to identify and estimate initial and recurring life cycle costs for the elements..."

**Background**

The following material presents information on the general aspects of life cycle cost analysis as well as its specific application to the City of Chula Vista operations. The discussion regarding the general benefits and process of LCC is meant to provide a common base of understanding upon which further analysis can take place.

Life cycle costing (LCC) is a method of calculating the total cost of asset ownership over the life span of the asset. Initial costs and all subsequent expected costs of significance are included in the life cycle cost analysis as well as disposal value and any other quantifiable benefits to be derived as a result of owning the asset. Operating and maintenance costs over the life of an asset often times far exceed initial costs and must be factored into the (decision) process.

Life cycle cost analysis should not be used in each and every purchase of an asset. The process itself carries a cost and therefore can add to the cost of the asset. Life Cycle Cost analysis can be justified only in those cases in which the cost of the analysis can be more than offset by the savings derived through the purchase of the asset.

Four major factors which may influence the economic feasibility of applying LCC analysis are:

1. Energy Intensiveness — LCC should be considered when the anticipated energy costs of the purchase are expected to be large throughout its life.
2. Life Expectancy — For assets with long lives (i.e., greater than five years), costs other than purchase price take on added importance. For assets with short lives, the initial costs become a more important factor.
3. Efficiency — The efficiency of operation and maintenance can have significant impact on overall costs. LCC is beneficial when savings can be achieved through reduction of maintenance costs.
4. Investment Cost — As a general rule, the larger the investment the more important LCC analysis becomes.

The four major factors listed above are not, however, necessary ingredients for life cycle cost analysis. A quick test to determine whether life cycle costing would apply to a purchase is to ask whether there are any post-purchase costs associated with it. Life cycle costs are a combination of initial and post-purchase costs.

**Applications for LCC Analysis**

The City of Chula Vista utilizes the concepts of life cycle cost analysis in determining the most cost effective purchase of capital equipment as well as in the determination of replacement costs for a variety of rolling stock. City staff uses LCC techniques in the preparation of the City's Five Year Capital Improvement Budget (CIP) as well as in the Capital Outlay sections of the annual Operating Budget.

In addition to these existing processes, the City should require the use of LCC analysis prior to or concurrent with the design of public facilities required by new development. Such a requirement will assist in the determination of the most cost effective selection of public facilities.

## APPENDIX

### A. Fiscal Impact Analysis Tables

# APPENDIX A

Table A-1
ABSORPTION SCHEDULE BY LAND USE

| Land Use | Per Unit/ Net Acre Value (000's) | Cumulative Developed and Occupied Units/Net Acres | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | TOTAL |
| SINGLE FAMILY RESIDENTIAL UNITS | $400 | 150 | 300 | 450 | 600 | 750 | 900 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 |
| MULTI-FAMILY RESIDENTIAL UNITS (Includes Muti-use Residential) | $300 | 275 | 550 | 825 | 1100 | 1375 | 1650 | 1790 | 1790 | 1790 | 1790 | 1790 | 1790 | 1790 | 1790 | 1790 |
| INDUSTRIAL ACRES | $2,000 | 20.0 | 40.0 | 60.0 | 80.0 | 100.0 | 120.0 | 140.0 | 160.0 | 180.0 | 200.0 | 220.0 | 240.0 | 260.0 | 274.6 | 274.6 |
| COMMERCIAL ACRES Includes Muti-use Commercial) | $2,300 | 0.0 | 0.0 | 6.3 | 12.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 | 18.6 |

Table A-2
ASSESSED VALUE

| Land Use | Per Unit/ Net Acre Value (000's) | Cumulative Assessed Value(000's) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | TOTAL |
| SINGLE FAMILY RESIDENTIAL UNITS | $400 | $ 60,000 | $ 120,000 | $ 180,000 | $ 240,000 | $ 300,000 | $ 360,000 | $ 398,400 | $ 398,400 | $ 398,400 | $ 398,400 | $ 398,400 | $ 398,400 | $ 398,400 | $ 398,400 | $ 398,400 |
| MULTI FAMILY RESIDENTIAL UNITS | $300 | $ 82,500 | $ 165,000 | $ 247,500 | $ 330,000 | $ 412,500 | $ 495,000 | $ 537,000 | $ 537,000 | $ 537,000 | $ 537,000 | $ 537,000 | $ 537,000 | $ 537,000 | $ 537,000 | $ 537,000 |
| INDUSTRIAL ACRES | $2,000 | $ 40,000 | $ 80,000 | $ 120,000 | $ 160,000 | $ 200,000 | $ 240,000 | $ 280,000 | $ 320,000 | $ 360,000 | $ 400,000 | $ 440,000 | $ 480,000 | $ 520,000 | $ 549,200 | $ 549,200 |
| COMMERCIAL ACRES | $2,300 | $ | $ | $ 14,490 | $ 28,980 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 | $ 42,780 |

Table A-3
Secured Property Tax Revenue (000s)

| SECURED PROPERTY TAX REVENUES | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL OTAY RANCH VILLAGE 2 | | | | | | | | | | | | | | | |
| Total Assessed Values | | $ 182,500 | $ 365,000 | $ 561,990 | $ 758,980 | $ 955,280 | $ 1,137,780 | $ 1,258,180 | $ 1,298,180 | $ 1,338,180 | $ 1,378,180 | $ 1,418,180 | $ 1,458,180 | $ 1,498,180 | $ 1,527,380 |
| Tax Rate | 1.0% | $1,825 | $3,650 | $5,620 | $7,590 | $9,553 | $11,378 | $12,582 | $12,982 | $13,382 | $13,782 | $14,182 | $14,582 | $14,982 | $15,274 |
| **TOTAL CHULA VISTA SHARE*** | 10.6% | **$193.5** | **$386.9** | **$595.7** | **$804.5** | **$1,012.6** | **$1,206.0** | **$1,333.7** | **$1,376.1** | **$1,418.5** | **$1,460.9** | **$1,503.3** | **$1,545.7** | **$1,588.1** | **$1,619.0** |

Table A-4

| UNSECURED PROPERTY TAX | Tax Per Acre | Unsecured Property Tax Revenue (000's) 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Industrial Uses | $312 | $6.2 | $12.5 | $18.7 | $25.0 | $31.2 | $37.4 | $43.7 | $49.9 | $56.2 | $62.4 | $68.6 | $74.9 | $81.1 | $85.7 |
| Commercial Uses | $301 | $0.0 | $0.0 | $1.9 | $3.8 | $5.6 | $5.6 | $5.6 | $5.6 | $5.6 | $5.6 | $5.6 | $5.6 | $5.6 | $5.6 |
| **TOTAL OTAY RANCH VILLAGE 2** | | **$6.2** | **$12.5** | **$20.6** | **$28.8** | **$36.8** | **$43.0** | **$49.3** | **$55.5** | **$61.8** | **$68.0** | **$74.2** | **$80.5** | **$86.7** | **$91.3** |

* Derived from discussions with the County Assessors Office and the City of Chula Vista (According to the Master Tax Agreement between the City of Chula Vista and the County, 41% of the County's general, library and flood control funds would go to the ci

Table A-5
ESTIMATED PROPERTY TRANSFER TAX REVENUES

| | |
|---|---|
| Single Family Resale Ratio | 0.00007857 |
| Commercial Resale Ratio | 0.00003929 |

| Product | Resale Rate (Years) | Property Transfer Tax (000s) 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Units | 7 | $4.7 | $9.4 | $14.1 | $18.9 | $23.6 | $28.3 | $31.3 | $31.3 | $31.3 | $31.3 | $31.3 | $31.3 | $31.3 | $31.3 |
| Multi Family Units | 7 | $6.5 | $13.0 | $19.4 | $25.9 | $32.4 | $38.9 | $42.2 | $42.2 | $42.2 | $42.2 | $42.2 | $42.2 | $42.2 | $42.2 |
| Commercial/Industrial Acres | 14 | $1.6 | $3.1 | $5.3 | $7.4 | $9.5 | $11.1 | $12.7 | $14.3 | $15.8 | $17.4 | $19.0 | $20.5 | $22.1 | $23.3 |
| **TOTAL OTAY RANCH VILLAGE 2** | | **$12.8** | **$25.5** | **$38.9** | **$52.2** | **$65.5** | **$78.3** | **$86.2** | **$87.7** | **$89.3** | **$90.9** | **$92.5** | **$94.0** | **$95.6** | **$96.8** |

Table A-6
ESTIMATED SALES TAX REVENUES

| | |
|---|---|
| 2003 Budget For Sales Tax | $20,353,998 |

| Land Use | Sales Tax Per Unit/Acre (000s) | City of Chula Vista's Share of Sales Tax (000s) 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Single Family Units | $0.234 | $35.1 | $70.2 | $105.3 | $140.4 | $175.5 | $210.6 | $233.1 | $233.1 | $233.1 | $233.1 | $233.1 | $233.1 | $233.1 | $233.1 |
| Total Multi Family Units | $0.234 | $64.4 | $128.7 | $193.1 | $257.4 | $321.8 | $386.1 | $418.9 | $418.9 | $418.9 | $418.9 | $418.9 | $418.9 | $418.9 | $418.9 |
| Total Industrial Acres | $3.354 | $67.1 | $134.2 | $201.2 | $268.3 | $335.4 | $402.5 | $469.6 | $536.6 | $603.7 | $670.8 | $737.9 | $805.0 | $872.0 | $921.0 |
| Total Commercial Acres | $3.570 | $0.0 | $0.0 | $22.5 | $45.0 | $66.4 | $66.4 | $66.4 | $66.4 | $66.4 | $66.4 | $66.4 | $66.4 | $66.4 | $66.4 |
| **TOTAL OTAY RANCH VILLAGE 2** | | **$166.5** | **$333.1** | **$522.1** | **$711.1** | **$899.1** | **$1,065.6** | **$1,187.9** | **$1,255.0** | **$1,322.0** | **$1,389.1** | **$1,456.2** | **$1,523.3** | **$1,590.4** | **$1,639.3** |

Table A-7
ESTIMATED FRANCHISE FEES

2003 Budget
For Franchise Fees $6,935,040

| Land Use | Per Unit | Franchise Fee Revenue (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $41 | $6.2 | $12.3 | $18.5 | $24.6 | $30.8 | $36.9 | $40.8 | $40.8 | $40.8 | $40.8 | $40.8 | $40.8 | $40.8 | $40.8 |
| Total Multi Family Units | $41 | $11.3 | $22.6 | $33.8 | $45.1 | $56.4 | $67.7 | $73.4 | $73.4 | $73.4 | $73.4 | $73.4 | $73.4 | $73.4 | $73.4 |
| Total Industrial Acres | $2,523 | $0.8 | $1.6 | $2.5 | $3.3 | $4.1 | $4.9 | $5.7 | $6.6 | $7.4 | $8.2 | $9.0 | $9.8 | $10.7 | $11.3 |
| Total Commercial Acres | $1,802 | $0.0 | $0.0 | $11.4 | $22.7 | $33.5 | $33.5 | $33.5 | $33.5 | $33.5 | $33.5 | $33.5 | $33.5 | $33.5 | $33.5 |
| TOTAL OTAY RANCH VILLAGE 2 | | $18.2 | $36.5 | $66.1 | $95.7 | $124.7 | $143.0 | $153.5 | $154.3 | $155.1 | $155.9 | $156.8 | $157.6 | $158.4 | $159.0 |

Table A-8
ESTIMATED TRANSIENT OCCUPANCY TAX

2003 Budget
For Transient Occupancy Tax $2,173,500

| Land Use | TOT per Unit/Net Acre | Transient Occupancy Tax (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $3 | $0.5 | $0.9 | $1.4 | $1.8 | $2.3 | $2.7 | $3.0 | $3.0 | $3.0 | $3.0 | $3.0 | $3.0 | $3.0 | $3.0 |
| Total Multi Family Units | $3 | $0.8 | $1.7 | $2.5 | $3.3 | $4.1 | $5.0 | $5.4 | $5.4 | $5.4 | $5.4 | $5.4 | $5.4 | $5.4 | $5.4 |
| Total Industrial Acres | $134 | $2.7 | $5.4 | $8.0 | $10.7 | $13.4 | $16.1 | $18.8 | $21.4 | $24.1 | $26.8 | $29.5 | $32.2 | $34.8 | $36.8 |
| Total Commercial Acres | $70 | $0.0 | $0.0 | $0.4 | $0.9 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 |
| TOTAL OTAY RANCH VILLAGE 2 | | $4.0 | $7.9 | $12.3 | $16.7 | $21.1 | $25.0 | $28.4 | $31.1 | $33.8 | $36.5 | $39.1 | $41.8 | $44.5 | $46.5 |

Table A-9
ESTIMATED UTILITY TAX

2003 Budget
For Utility Tax $4,170,600

| Land Use | Tax per Unit/Net Acre | Utility Tax Revenue (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $25 | $3.8 | $7.5 | $11.3 | $15.0 | $18.8 | $22.5 | $24.9 | $24.9 | $24.9 | $24.9 | $24.9 | $24.9 | $24.9 | $24.9 |
| Total Multi Family Units | $25 | $6.9 | $13.8 | $20.6 | $27.5 | $34.4 | $41.3 | $44.8 | $44.8 | $44.8 | $44.8 | $44.8 | $44.8 | $44.8 | $44.8 |
| Total Industrial Acres | $1,518 | $21.7 | $43.4 | $65.0 | $86.7 | $108.4 | $130.1 | $151.8 | $173.4 | $195.1 | $216.8 | $238.5 | $260.2 | $281.8 | $297.7 |
| Total Commercial Acres | $1,084 | $0.0 | $0.0 | $6.8 | $13.7 | $20.2 | $20.2 | $20.2 | $20.2 | $20.2 | $20.2 | $20.2 | $20.2 | $20.2 | $20.2 |
| TOTAL OTAY RANCH VILLAGE 2 | | $32.3 | $64.6 | $103.7 | $142.9 | $181.7 | $214.0 | $241.6 | $263.3 | $284.9 | $306.6 | $328.3 | $350.0 | $371.7 | $387.5 |

Table A-10
ESTIMATED BUSINESS LICENSE REVENUE

2003 Budget
For Business License Tax $1,057,417

| Land Use | Average Business License Fee Per Acre | Business License Fees (000's) 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Industrial Acres | $319 | $11.7 | $23.5 | $35.2 | $47.0 | $58.7 | $70.4 | $82.2 | $93.9 | $105.7 | $117.4 | $129.1 | $140.9 | $152.6 | $161.2 |
| Total All Commercial Acres | $587 | $0.0 | $0.0 | $3.7 | $7.4 | $10.9 | $10.9 | $10.9 | $10.9 | $10.9 | $10.9 | $10.9 | $10.9 | $10.9 | $10.9 |
| **TOTAL OTAY RANCH VILLAGE 2** | | **$11.7** | **$23.5** | **$38.9** | **$54.4** | **$69.6** | **$81.4** | **$93.1** | **$104.8** | **$116.6** | **$128.3** | **$140.1** | **$151.8** | **$163.5** | **$172.1** |

Table A-11
ESTIMATED MISCELLANEOUS REVENUES

| 2003 Budget | Total Budget | Allocation of Budget: Residential | Commercial | Industrial | Per House Unit | Per Comm. Acre | Per Industrial Acre |
|---|---|---|---|---|---|---|---|
| Animal License | $96,614 | $96,614 | | | $1.55 | | |
| Bicycle License | $0 | $0 | | | $0.00 | | |
| Motor Vehicle Licenses | $0 | $0 | | | $0.00 | | |
| State HOPTR | $0 | $0 | | | $0.00 | | |
| Gas Tax | $2,559,533 | $2,239,591 | $243,156 | $76,786 | $35.83 | $173.1 | $105.4 |
| Library Fines | $170,000 | $170,000 | | | $2.72 | | |
| Parking Citations | $312,995 | $234,746 | $59,469 | $18,780 | $3.76 | $42.3 | $25.8 |
| Charges for Current Services | | | | | | | |
| Swimming Pools | $0 | $0 | | | $0.00 | | |
| Recreation Program | $668,907 | $668,907 | | | $10.70 | | |
| Park Reservation Fees | $0 | $0 | | | $0.00 | | |
| Other Park & Recr. Fees | $0 | $0 | | | $0.00 | | |
| Total Misc. Revenue | $3,808,049 | $3,409,859 | $302,625 | $95,566 | | | |
| | Per Unit/Acre | | | | $54.56 | $215.48 | $131.22 |

| Land Use | Per Unit/Acre | Miscellaneous Revenue (000's) 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Single Family Units | $54.56 | $8.2 | $16.4 | $24.6 | $32.7 | $40.9 | $49.1 | $54.3 | $54.3 | $54.3 | $54.3 | $54.3 | $54.3 | $54.3 | $54.3 |
| Total Multi Family Units | $54.56 | $15.0 | $30.0 | $45.0 | $60.0 | $75.0 | $90.0 | $97.7 | $97.7 | $97.7 | $97.7 | $97.7 | $97.7 | $97.7 | $97.7 |
| Total Industrial Acres | $131.22 | $4.3 | $8.6 | $12.9 | $17.2 | $21.5 | $25.9 | $30.2 | $34.5 | $38.8 | $43.1 | $47.4 | $51.7 | $56.0 | $59.2 |
| Total Commercial Acres | $215.48 | $0.0 | $0.0 | $1.4 | $2.7 | $4.0 | $4.0 | $4.0 | $4.0 | $4.0 | $4.0 | $4.0 | $4.0 | $4.0 | $4.0 |
| **TOTAL OTAY RANCH VILLAGE 2** | | **$27.5** | **$55.0** | **$83.8** | **$112.7** | **$141.5** | **$169.0** | **$186.2** | **$190.5** | **$194.8** | **$199.1** | **$203.4** | **$207.7** | **$212.0** | **$215.2** |

Table A-12
ESTIMATED EXPENDITURES FOR GOVERNMENT ADMINISTRATION

| 2003 Budget For Government Administration | $22,081,645 |
|---|---|

| Land Use | Allocated Cost |
|---|---|
| All Land Uses | 26.2 % of total line operations |

| Land Use | Govemment Administration (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| **TOTAL OTAY RANCH VILLAGE 2** | **$101.9** | **$204.0** | **$322.9** | **$438.1** | **$558.1** | **$664.9** | **$733.0** | **$753.5** | **$767.9** | **$782.2** | **$796.6** | **$811.0** | **$825.3** | **$835.8** |

Table A-13
ESTIMATED PLANNING COST
(Non-Current)

| 2003 Budget For Planning Expenditures | $1,750,367 |
|---|---|

| | | | | |
|---|---|---|---|---|
| 1404.41 | 0.13555722 | 9.653E-05 | 0 |
| 728.29 | 0.07030159 | 9.653E-05 | 168.962335 |

| | Cost per Unit /Net Acre |
|---|---|
| Residential | $22.24 |
| Industrial | $168.96 |
| Commercial | $168.96 |

| Land Use | Planning Costs (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $3.3 | $6.7 | $10.0 | $13.3 | $16.7 | $20.0 | $22.2 | $22.2 | $22.2 | $22.2 | $22.2 | $22.2 | $22.2 | $22.2 |
| Total Multi Family Units | $6.1 | $12.2 | $18.3 | $24.5 | $30.6 | $36.7 | $39.8 | $39.8 | $39.8 | $39.8 | $39.8 | $39.8 | $39.8 | $39.8 |
| Total Industrial Acres | $3.4 | $6.8 | $10.1 | $13.5 | $16.9 | $20.3 | $23.7 | $27.0 | $30.4 | $33.8 | $37.2 | $40.6 | $43.9 | $46.4 |
| Total Commercial Acres | $0.0 | $0.0 | $1.1 | $2.1 | $3.1 | $3.1 | $3.1 | $3.1 | $3.1 | $3.1 | $3.1 | $3.1 | $3.1 | $3.1 |
| **TOTAL OTAY RANCH VILLAGE 2** | **$12.8** | **$25.7** | **$39.6** | **$53.5** | **$67.3** | **$80.1** | **$88.8** | **$92.1** | **$95.5** | **$98.9** | **$102.3** | **$105.7** | **$109.0** | **$111.5** |

Table A-14
ESTIMATED POLICE PROTECTION COST

| 2003 Budget For Police Expenditures | $32,580,130 |
|---|---|
| | Cost per Unit/Net Acre |
| Residential | $380.57 |
| Industrial | $1,819 |
| Commercial | $5,319 |

| | Police Protection Costs (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $57.1 | $114.2 | $171.3 | $228.3 | $285.4 | $342.5 | $379.0 | $379.0 | $379.0 | $379.0 | $379.0 | $379.0 | $379.0 | $379.0 |
| Total Multi Family Units | $104.7 | $209.3 | $314.0 | $418.6 | $523.3 | $627.9 | $681.2 | $681.2 | $681.2 | $681.2 | $681.2 | $681.2 | $681.2 | $681.2 |
| Total Industrial Acres | $36.4 | $72.7 | $109.1 | $145.5 | $181.9 | $218.2 | $254.6 | $291.0 | $327.3 | $363.7 | $400.1 | $436.4 | $472.8 | $499.4 |
| Total Commercial Acres | $0.0 | $0.0 | $33.5 | $67.0 | $98.9 | $98.9 | $98.9 | $98.9 | $98.9 | $98.9 | $98.9 | $98.9 | $98.9 | $98.9 |
| **TOTAL OTAY RANCH VILLAGE 2** | **$198.1** | **$396.2** | **$627.8** | **$859.5** | **$1,089.5** | **$1,287.6** | **$1,413.8** | **$1,450.2** | **$1,486.5** | **$1,522.9** | **$1,559.3** | **$1,595.6** | **$1,632.0** | **$1,658.6** |

Table A-15
ESTIMATED FIRE PROTECTION COST

| 2003 Budget For Fire Expenditures | $10,271,309 |
|---|---|
| | Cost per Unit /Net Acre |
| Residential | $164.34 |
| Industrial | $573 |
| Commercial | $1,677 |

| | Fire Protection Costs (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $24.7 | $49.3 | $74.0 | $98.6 | $123.3 | $147.9 | $163.7 | $163.7 | $163.7 | $163.7 | $163.7 | $163.7 | $163.7 | $163.7 |
| Total Multi Family Units | $45.2 | $90.4 | $135.6 | $180.8 | $226.0 | $271.2 | $294.2 | $294.2 | $294.2 | $294.2 | $294.2 | $294.2 | $294.2 | $294.2 |
| Total Industrial Acres | $11.5 | $22.9 | $34.4 | $45.9 | $57.3 | $68.8 | $80.3 | $91.7 | $103.2 | $114.7 | $126.1 | $137.6 | $149.1 | $157.4 |
| Total Commercial Acres | $0.0 | $0.0 | $10.6 | $21.1 | $31.2 | $31.2 | $31.2 | $31.2 | $31.2 | $31.2 | $31.2 | $31.2 | $31.2 | $31.2 |
| **TOTAL OTAY RANCH VILLAGE 2** | **$81.3** | **$162.6** | **$254.5** | **$346.4** | **$437.7** | **$519.1** | **$569.3** | **$580.8** | **$592.2** | **$603.7** | **$615.2** | **$626.6** | **$638.1** | **$646.5** |

Table A-16
ESTIMATED LIBRARY COST

| 2003 Budget For Library Expenditures | $7,395,347 |
|---|---|
| | Cost per Unit/Net Acre |
| Residential | $118.33 |
| Commercial | $0 |

| Land Use | Library Costs (000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Single Family Units | $17.7 | $35.5 | $53.2 | $71.0 | $88.7 | $106.5 | $117.9 | $117.9 | $117.9 | $117.9 | $117.9 | $117.9 | $117.9 | $117.9 |
| Total Multi Family Units | $32.5 | $65.1 | $97.6 | $130.2 | $162.7 | $195.2 | $211.8 | $211.8 | $211.8 | $211.8 | $211.8 | $211.8 | $211.8 | $211.8 |
| Total Commercial/Industrial Acres | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| **TOTAL OTAY RANCH VILLAGE 2** | **$50.3** | **$100.6** | **$150.9** | **$201.2** | **$251.4** | **$301.7** | **$329.7** | **$329.7** | **$329.7** | **$329.7** | **$329.7** | **$329.7** | **$329.7** | **$329.7** |

Table A-17
ESTIMATED EXPENDITURES FOR PUBLIC WORKS

| 2003 Budget For Public Works | $16,798,725 | Cost Allocation Unit/Acre Residential | Commercial/Industrial | | | |
|---|---|---|---|---|---|---|
| Operations | | | | | | |
| Administration | $1,656,815 | $23.69 | $179.97 | | | |
| Traffic Operations | $801,733 | $593.44 | per lane mile | | | |
| Street Maintenance | $1,767,339 | $1,308.17 | per lane mile (1) | | | |
| Street Sweeping | $295,968 | $199.11 | per lane mile | | | |
| Street Tree Maintenance | $859,876 | $383.56 | per street mile | | | |
| Wastewater Maintenance | $168,271 | self supporting | | 0 | 0 | 0 |
| Wastewater Lift Station Maint. | $3,717,689 | self supporting | | 20 | 40 | 60 |
| Engineering | | | | 0 | 0 | 0 |
| Traffic Signal Maint. | | | | 0 | 0 | 6.3 |
| Signal costs | $573,119 | $4,036 | per signal | | | |
| Street light costs | $859,678 | $136 | per street light | | | |
| Transit Service Operations | $180,655 | self supporting | | | | |
| Environmental Mgmt | $164,207 | self supporting | | | | |

1) Estimated at 20% in year 5, 40% in year 6, to 100% in year 9

| | Public Works Expenditures (000's) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | TOTAL |
| Public Street Lane Miles * | 6.0 | 13.0 | 20.0 | 27.0 | 34.0 | 41.0 | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 | 48.0 |
| Public Street Miles * | 2.0 | 4.0 | 6.0 | 9.0 | 11.0 | 13.0 | 14.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 |
| Street Lights** | 29 | 61 | 95 | 128 | 162 | 194 | 216 | 226.0 | 226.0 | 226.0 | 226.0 | 226.0 | 226.0 | 226.0 | 226 |
| Signals** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Operations Admin. | $ 13.7 | $ 27.3 | $ 42.1 | $ 56.9 | $ 71.7 | $ 85.4 | $ 94.5 | $ 98.1 | $ 101.7 | $ 105.3 | $ 108.9 | $ 112.5 | $ 116.1 | $ 118.8 | |
| Street Mile Costs | $ 0.8 | $ 1.5 | $ 2.3 | $ 3.5 | $ 4.2 | $ 5.0 | $ 5.4 | $ 5.8 | $ 5.8 | $ 5.8 | $ 5.8 | $ 5.8 | $ 5.8 | $ 5.8 | |
| Lane Mile Costs | $ 4.8 | $ 10.3 | $ 15.9 | $ 21.4 | $ 26.9 | $ 32.5 | $ 36.5 | $ 38.0 | $ 38.0 | $ 38.0 | $ 38.0 | $ 38.0 | $ 38.0 | $ 38.0 | |
| Street Maint.*** | $ | $ | $ | $ | $ 8.9 | $ 10.7 | $ 12.0 | $ 12.6 | $ 12.6 | $ 12.6 | $ 12.6 | $ 12.6 | $ 12.6 | $ 12.6 | |
| Signal/street light costs | $ 4.0 | $ 8.3 | $ 12.9 | $ 17.4 | $ 22.1 | $ 26.4 | $ 29.4 | $ 30.8 | $ 30.8 | $ 30.8 | $ 30.8 | $ 30.8 | $ 30.8 | $ 30.8 | |
| **TOTAL OTAY RANCH VILLAGE 2** | **$ 23.1** | **$ 47.5** | **$ 73.2** | **$ 99.2** | **$ 133.8** | **$ 160.0** | **$ 177.8** | **$ 185.3** | **$ 188.9** | **$ 192.5** | **$ 196.1** | **$ 199.7** | **$ 203.3** | **$ 206.0** | |

* The phasing of streets were estimated based on the estimated absorption of residential units.
** The phasing of signals and street lights were based on the phasing of streets
***Represent a 15 year annual average during the period from 2004 to 2017

Table A-18
ESTIMATED EXPENDITURES FOR PARK AND RECREATIONS

| Estimated Park Development Schedule | Park Acres | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| | 0.0 | 0.0 | 7.4 | 8.7 | 15.1 | 22.1 | 29.1 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 |

| 2003 Budget For Park & Recreation | $5,644,290 | Cost Allocation Unit/Acre | |
|---|---|---|---|
| Parks, Recreation and Open Space | $5,644,290 | | |
| Parks | $3,922,481 | $2,296 | per park acre |
| Administration - Parks | $385,488 | | |
| Administration - Open Space | $334,552 | | provided by lighting and landscape district |
| Maintenance | $3,202,441 | | |
| General | $2,147,445 | | |
| Manna Park | $271,425 | | Not Applicable |
| Recreation | $3,399,284 | $54.39 | per housing unit |
| Administration- Recreation | $139,266 | $2.23 | per housing unit |
| Swimming & Sports | $911,781 | $14.59 | per housing unit |
| Senior and youth Services | $372,094 | $5.95 | per housing unit |
| Recreation Facilities | $1,976,142 | $31.62 | per housing unit |

| | Park and Recreations(000's) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Park | $0.0 | $0.0 | $17.0 | $20.0 | $34.7 | $50.7 | $66.8 | $86.4 | $86.4 | $86.4 | $86.4 | $86.4 | $86.4 | $86.4 |
| Recreation | $23.1 | $46.2 | $69.3 | $92.5 | $115.6 | $138.7 | $151.5 | $151.5 | $151.5 | $151.5 | $151.5 | $151.5 | $151.5 | $151.5 |
| **TOTAL OTAY RANCH VILLAGE 2** | **$23.1** | **$46.2** | **$86.3** | **$112.4** | **$150.2** | **$189.4** | **$218.3** | **$238.0** | **$238.0** | **$238.0** | **$238.0** | **$238.0** | **$238.0** | **$238.0** |

# Otay Ranch Business Park

# Design Guidelines

*Villages Two and Three*

*ADOPTED*
*MAY 23, 2006*
*BY RESOLUTION NO. 2006-155*

THE OTAY RANCH COMPANY

# *Otay Ranch Business Park Design Guidelines*

*Villages Two and Three*

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# EXHIBIT LIST

# I. Introduction

# A. DESIGN GUIDELINES DOCUMENT

## 1. Design Guidelines Document

The Otay Ranch General Development Plan (GDP) requires that a Village Design Plan be prepared for each village at the Sectional Planning Area (SPA) level of planning. The Village Design Plan guides planning and development by defining the intended character and design elements of the village. The Otay Ranch Business Park is not an Otay Ranch Urban Village, and as such does not require a Village Design Plan to address complex land use and design issues. Instead, these Design Guidelines are provided as a guide for developers and designers in creating the Business Park and as a design evaluation tool for the City of Chula Vista.


The Otay Ranch Business Park Design Guidelines provide direction for the design of sites, buildings and landscapes within the Business Park to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Design Guidelines identify a theme for the Otay Ranch Business Park and delineate that identity through streetscape and landscape design, signage programs, and architectural and lighting guidelines.

This introductory section provides a description of the design review process for development within Otay Ranch Business Park. Section II describes the Otay Ranch Business Park setting, land use plan, and the design theme of the village. A description of the Otay Ranch Business Park design compliance with the Otay Ranch GDP is provided in the Appendix.

## 2. Companion Documents

***Otay Ranch GDP Overall Design Plan***

The guiding framework plan is the Otay Ranch GDP Overall Design Plan. The Overall Design Plan provides general design guidelines appropriate to the pedestrian and transit-oriented village concepts envisioned for the community.

***Montecito & The Otay Ranch Business Park Planned Community (PC) District Regulations***

The PC District Regulations establish land use development standards and appropriate regulations (zoning) for all construction within the project area. All proposed developments must adhere to the land uses, setbacks, building heights and similar regulatory criteria specified in the PC District Regulations.

***City of Chula Vista Design Manual***

The City Design Manual provides design guidelines for commercial and industrial developments. The Manual also outlines the City's design review process.

***City of Chula Vista Landscape Manual***

The City's Landscape Manual addresses overall requirements and approval processes and project landscape requirements. The Manual also includes lists of discouraged and recommended plant lists.

## B. DESIGN REVIEW PROCESS

### 1. Process

Formal design review processes have been established to ensure all development within Otay Ranch is consistent with the City of Chula Vista policies and development standards. Development must conform to the Otay Ranch GDP Overall Design Plan, Otay Ranch Business Park Design Plan and The Otay Ranch Business Park Planned Community District Regulations. The process requires preparation of site, landscape and architectural plans that will be reviewed and approved by the Master Developer, City of Chula Vista Zoning Administrator and City of Chula Vista Design Review Committee, depending on the type and size of proposed project. The various review processes are described in the following sections.

### 2. Master Developer Review

The Otay Ranch Business Park infrastructure and building lots will be developed by the Master Developer, The Otay Ranch Company. Most of the elements described in Section II of this document, including landform grading, village entries and streets will be implemented by the Master Developer. The development of building sites within the plan area will be by Merchant Builders. A design review process has been created to facilitate development by Merchant Builders within the unique village planning concepts of the Otay Ranch planned community.

The design review process includes two integrated procedures: design review and approval by the Master Developer and review and approval by the City of Chula Vista. The process requires the Merchant Builder to formulate the design for their parcel and review it with the Master Developer prior to formal application and review by the City. The review requirements of the Master Developer are intended to ensure that the builder's intended product and designs meet the standards and criteria for the entire planned community. The items to be included in the Merchant Builder's design submittal package to the Master Developer would typically consist of preliminary site, landscape and architectural plans. Following acceptance of the Merchant Builder's schematic design, a continuing exchange of information will be expected as the design is finalized and the City's review process begins. Final, approved plans shall be provided to the Master Developer. The Master Developer shall provide written approval in writing prior to final approval by the City of Chula Vista.

### 3. Zoning Administrator Design Review

The Zoning Administrator is authorized to approve applications on several subjects as provided in Section 19.14.030 of the Chula Vista Zoning Code,

specifically including: Site, Architectural and Landscape Plan approval. Public buildings of 20,000 square feet or less in size are subject to Administrative Design Review. All proposals shall be consistent with the Montecito and The Otay Ranch Business Park Community District Regulations and these Otay Ranch Business Park Design Guidelines.

### 4. Design Review Committee

All proposals over 20,000 square feet in size shall be approved through the Design Review Committee approval process. The Design Review Committee shall review plans as required by the Planned Community District Regulations, and as provided herein. They shall base their findings on the City's Design Manuals and this Otay Ranch Business Park Design Guidelines. Refer to Sections 19.14.581 through 19.14.600 of the Zoning Ordinance for additional information.

### 5. Appeals

An appeal to the Planning Commission on a decision to the Design Review Committee may be filed within ten days after the decision as provided for in Section 19.14.583 of the City's Zoning Ordinance.

# II. Plan Area Design Guidelines

This section provides general design guidelines and concepts for industrial development to encourage a high level of design quality and creativity. These Plan Area Design Guidelines address the elements that will be implemented by the Master Developer. Those elements include the design of the overall land use plan, grading, slope planting, streets and parkways, village entries, perimeter walls and fencing, lighting and street furnishings.

General Design Objectives:

- Contribute toward reinforcing or establishing a distinct architectural and environmental image for the business park.
- Consider the scale, proportion and character of development in the surrounding area.
- Establish attractive, inviting, imaginative and functional site arrangement of buildings and parking areas and a high quality architectural and landscape design which provides an efficient and pleasant work environment.
- Facilitate and encourage on-site pedestrian activity.
- Minimize excessive or incompatible impacts of noise, light, traffic and visual character.
- Preserve and incorporate access to views into the project development proposal.

## A. PLAN AREA DESIGN

The Otay Ranch Business Park plan area is located in the southwestern portion of the Otay Valley Parcel of the Otay Ranch. The village is bounded by the Otay landfill to the west and northwest, Montecito to the north, Wolf Canyon open space to the east and the Otay River Valley open space to the south. Main Street is located along the southern boundary. Heritage Road bisects the Village 3 Portion of Business Park and provides the primary access. In addition, two industrial parcels are within Village Two, north and east of the Otay Landfill.

Unlike the more complex Urban Villages in Otay Ranch, the design of this SPA Plan area is fairly straightforward. The industrial and Business Park land uses require large, level development parcels that can accommodate office and warehouse buildings, outdoor storage areas, truck loading areas and parking for employees and visitors. The street circulation system is designed to accommodate large truck movement throughout the Business Park. Transit stations and sidewalks are integrated into the circulation design to promote the use of public transportation. Landscaping provides the opportunity to unify the development and integrate it into the overall Otay Ranch design theme.

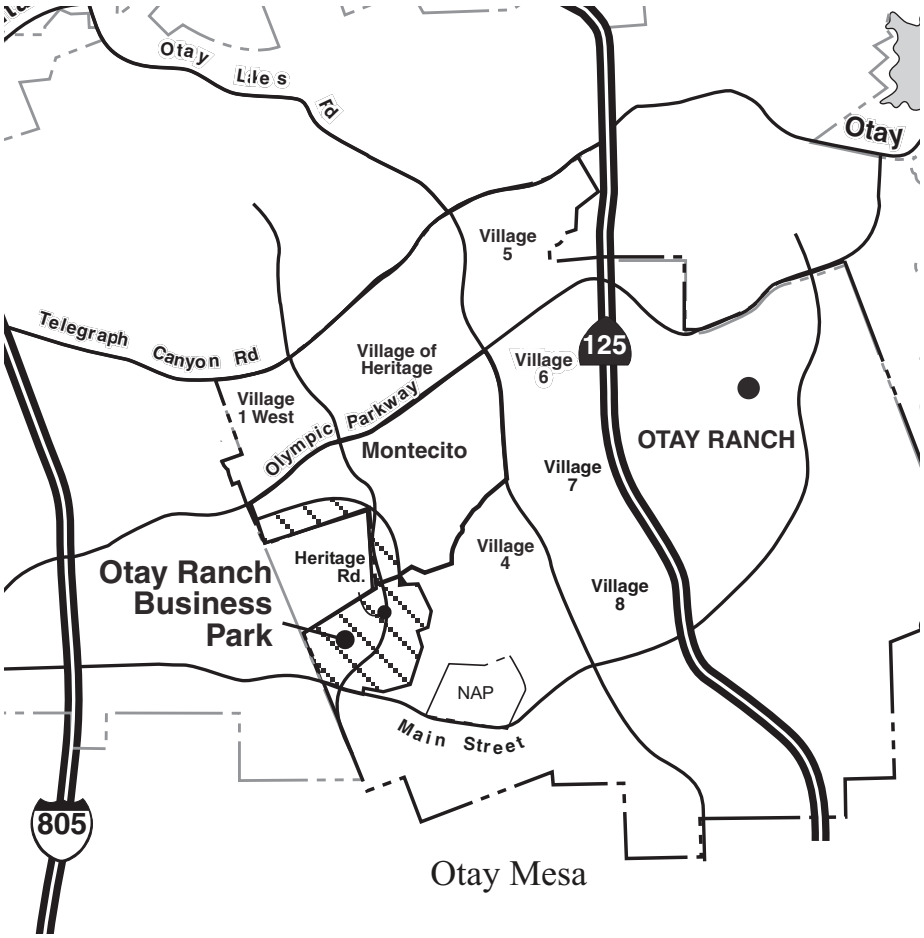



Exhibit 1

*Otay Ranch Business Park location*

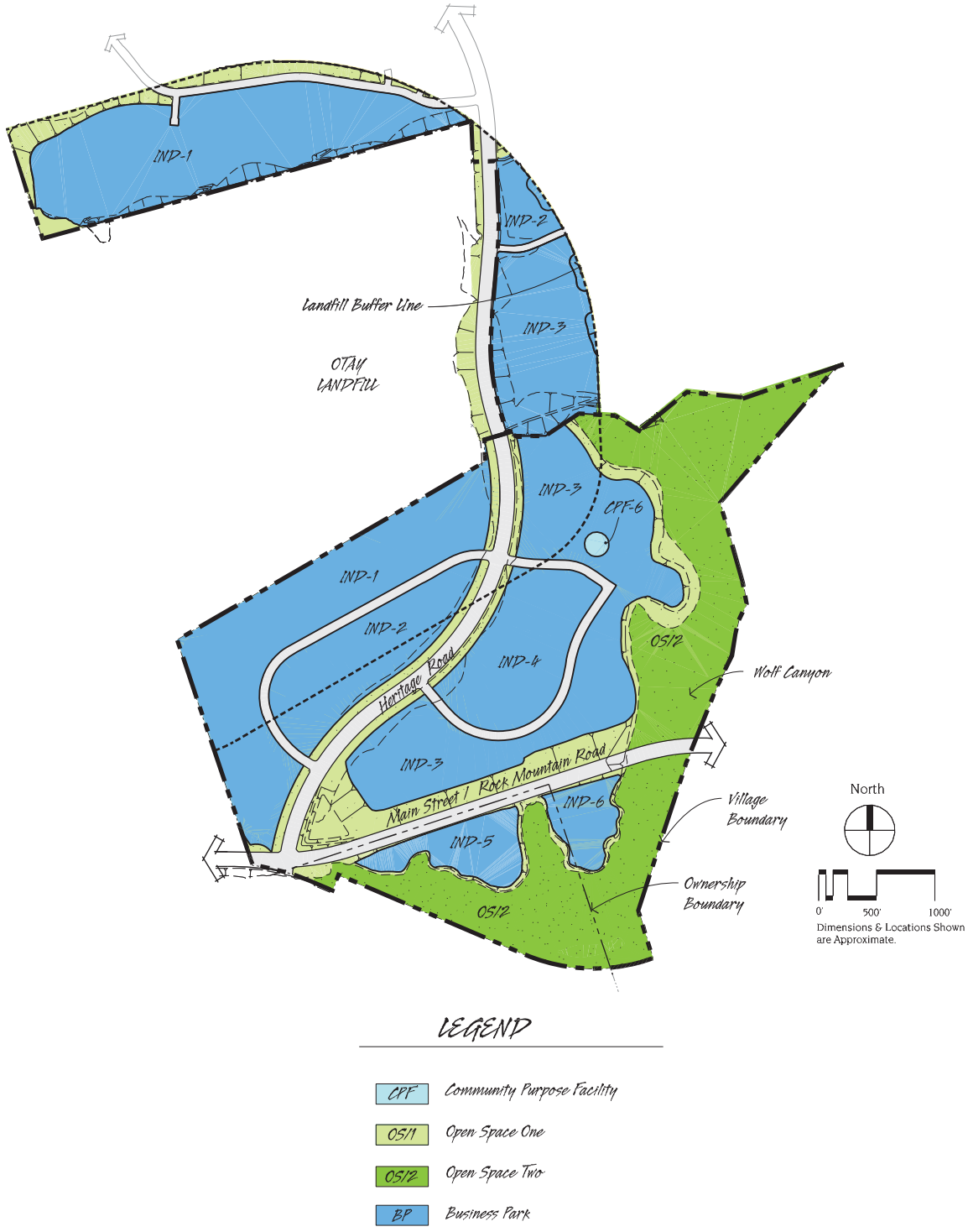



Exhibit 2

Otay Ranch Business Park Site Utilization Plan

## 1. LANDFORM GRADING

The eastern topography of the Business Park within Village Three is generally a ridge that will be lowered to create a series of large, stepped terraces from north to south. The topography of the western area is a moderate slope from northwest to southeast that will also be terraced to create development sites. Heritage Road will be located through the Business Park, descending in grade from the northern area to the intersection with Main Street at the southern border of the development area. The Village Two portion of the Business Park located east of Heritage Road is relatively flat and relates to Heritage Road along its western edge. The Village Two West area is below the landfill and relates to Santa Victoria Road along its northern edge.

The eastern edge of the development area will transition to the Wolf Canyon open spaces to the east. This area will be landform graded in conformance with the City's Municipal Code Grading Ordinance #1797. The manufactured slopes in this area will be planted with native-compatible plant materials to create both an aesthetic and biological transition to the Wolf Canyon natural Preserve area.

The grading plan strives to minimize large and steep manufactured slopes. The design proposes to utilize landform grading techniques and landscaping to minimize the manufactured appearance of slopes. Landform grading will consist of varied or contoured slopes. Both vertical and horizontal undulation will be integrated in the design. Trails and benching, where required, will also contribute to variation in the slope plane. The primary treatment for creating aesthetically pleasing slopes within the village is through landscaping. Manufactured slopes will be planted with varied size trees, shrubs and groundcovers to create undulation on the slope face. Varied tree heights obscure the top of slopes and create skyline interest. Exhibit 3 illustrates both variable and contour grading concepts.

Guidelines to be used for grading and slope design are:

- Create elevation changes within the property that strive for a balance of cut and fill grading.
- Use grade changes to optimize views and a sense of spaciousness.
- Use grade changes between differing land uses where separation and buffering is desired.
- Avoid, wherever possible, creating slopes over 25 feet in height to minimize a sense of enclosure, particularly in residential rear yards.
- Use contour grading techniques, where appropriate on slopes over 25 feet in height.
- Use varied-height trees, shrubs and groundcovers to undulate the surface of the slope, where possible.

- Minimize surface runoff and erosion potential by planting low water consumptive and drought tolerant plants.
- Use state-of the art erosion control, irrigation and water management practices to protect slopes.
- Emphasize and accentuate scenic vistas and natural landforms.

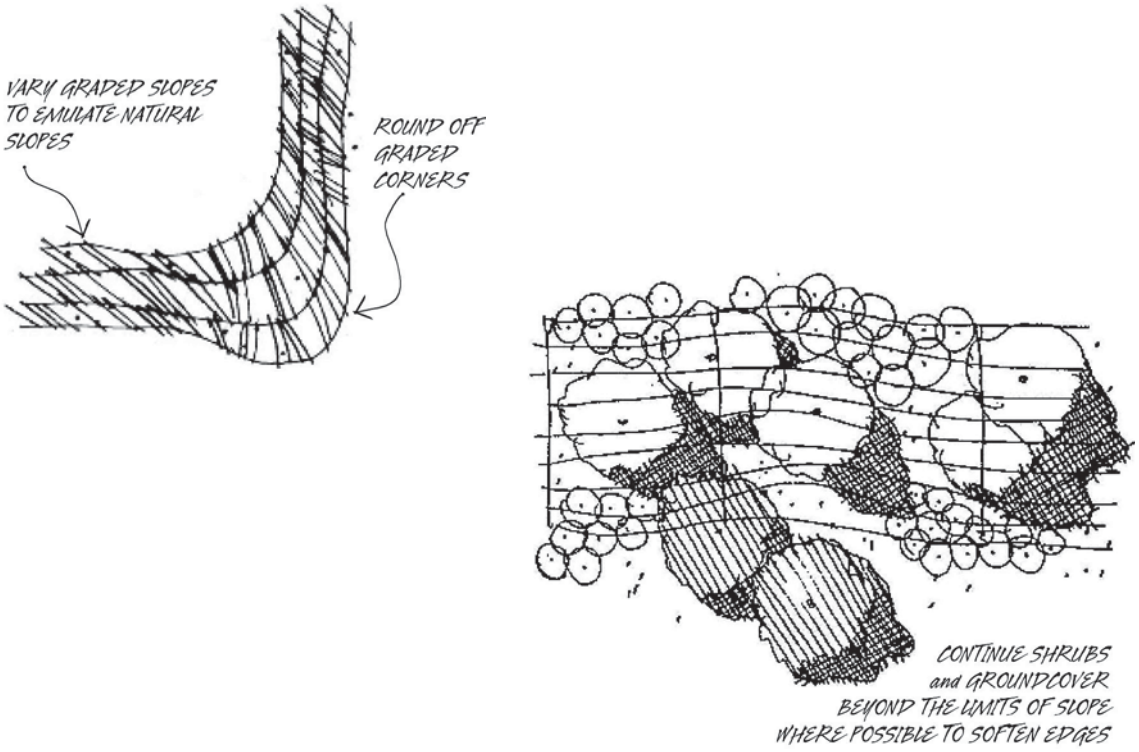



Exhibit 3
*Contour Grading Techniques*

## B. LANDSCAPE DESIGN

Guidelines are provided in this section to assist the Master Developer's landscape architects and contractors in the design and construction process for the planting and irrigation of the village. The Master Developer will implement the village entries, street parkways and slope planting. These guidelines shall be used in conjunction with the Otay Ranch Overall Design Guidelines, the city of Chula Vista Design Manual and Landscape Manual, as well as the appropriate Federal, State, and County codes:

- All landscape and irrigation plans shall be prepared by a licensed California landscape architect and shall be submitted to the City of Chula Vista, and to the Master Developer for review and approval prior to the start of construction. All submissions shall demonstrate compliance with the "Landscape Design and Development Guidelines" section contained herein.
- These guidelines are design concept guidelines only and are not intended to be used for engineering and or construction purposes. It is the responsibility of the project merchant builder to have the appropriate consultants (civil, structural, and geotechnical engineers as well as architects, and landscape architects) to provide the necessary structural details, and specifications for the construction of these fences, walls, monuments or other structures based on the concepts provided herein.

## I. Entries

### *Otay Ranch Community Entry*

The intersection of Rock Mtn. Road and Heritage Road is an Otay Ranch Community Entry. This entry will be designed to be consistent with the Otay Ranch community theme, including the Otay Ranch stone pilaster, low walls and landscape planted in orderly patterns.

Exhibit 4 illustrates the conceptual design of the entry landscape.

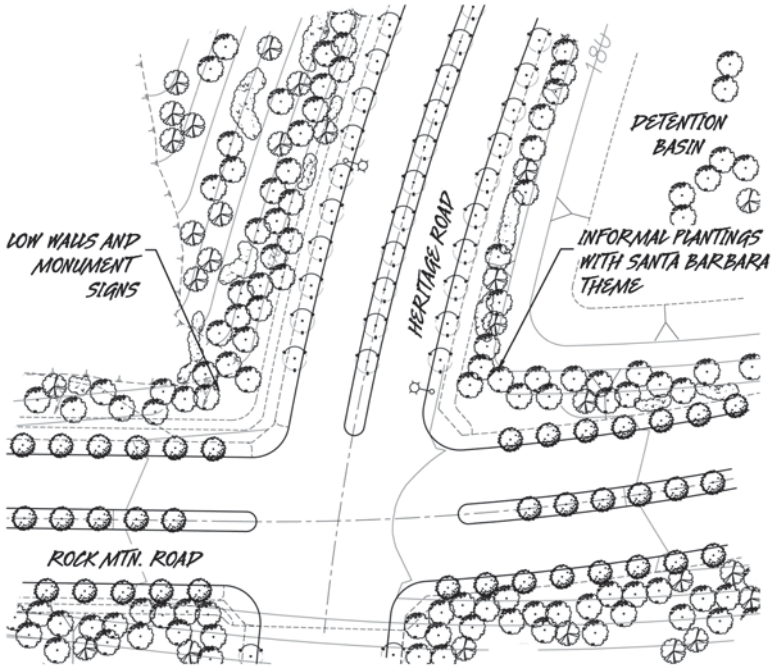



Exhibit 4
*Otay Ranch Community Entry*

### *Business Park Entries*

Business Park entries to the Village Two and Three plan area are created at three intersections on Heritage Road. Slopes along Heritage provide fairly extensive landscape areas for enhanced landscaping and monument signs identifying the Business Park. Access to the Business Park north of the landfill is provided via two intersections on Santa Victoria Road.

The entry landscape will consist of an informal grove of Afghan Pines (Pinus eldarica) that will contrast with the backdrop planting of the slopes behind the entries. Low walls will define the entry areas and provide locations for signage and monuments. Low shrubs and grasses will be planted in the foreground.

Exhibit 5 illustrates the conceptual design of the entry landscapes

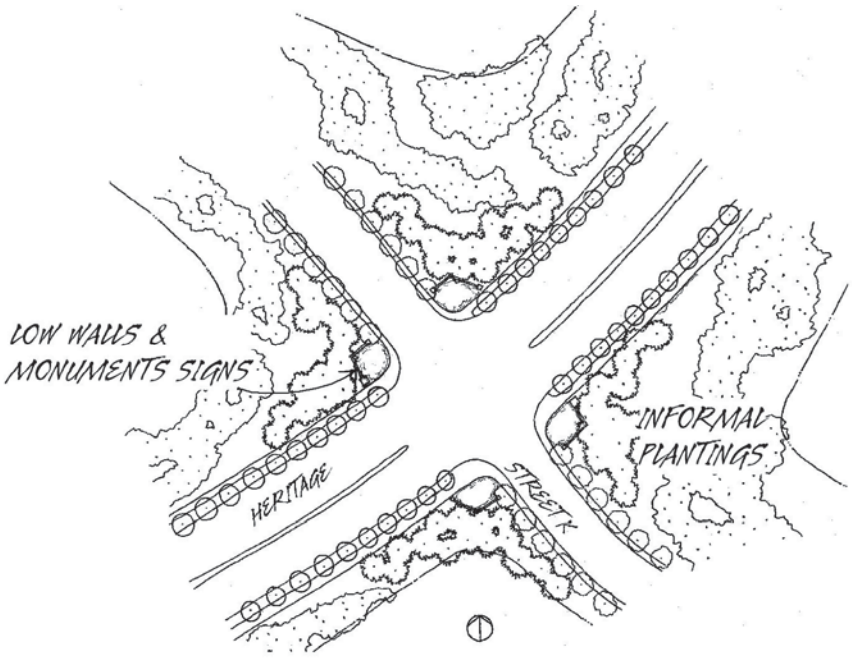



Exhibit 5
*Business Park Entry Concept*

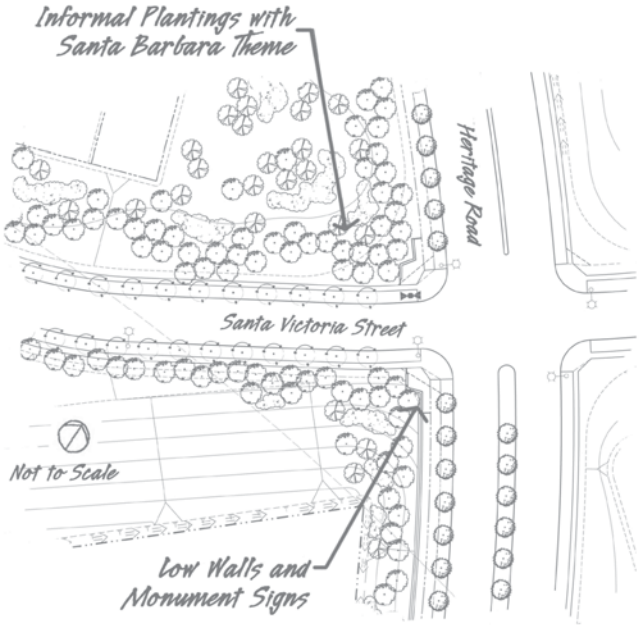



Exhibit 6
*Primary Montecito West Entry*
Heritage Road

## 2. Streetscapes

The following are guidelines for street parkway landscapes:

- The location of sidewalks and trees within parkways shall be coordinated to accommodate the mature growth of the street trees.
- Root barriers and deep watering (bubbler) systems shall be used.
- Routine tree pruning and maintenance will be conducted pursuant to City standards. Depending on the location of street trees, pruning activities may be the responsibility of the City, a Community Facilities District or Business Association.

***Six-Lane Major Arterial Streets***

Landscaping shall be compatible with the Otay Ranch design themes. The landscape includes evenly spaced rows (40' on center) of California Pepper trees (Schinus molle) in the parkways and medians.

Exhibit 6 illustrates in cross section and plan view the landscape for a six-lane arterial road.

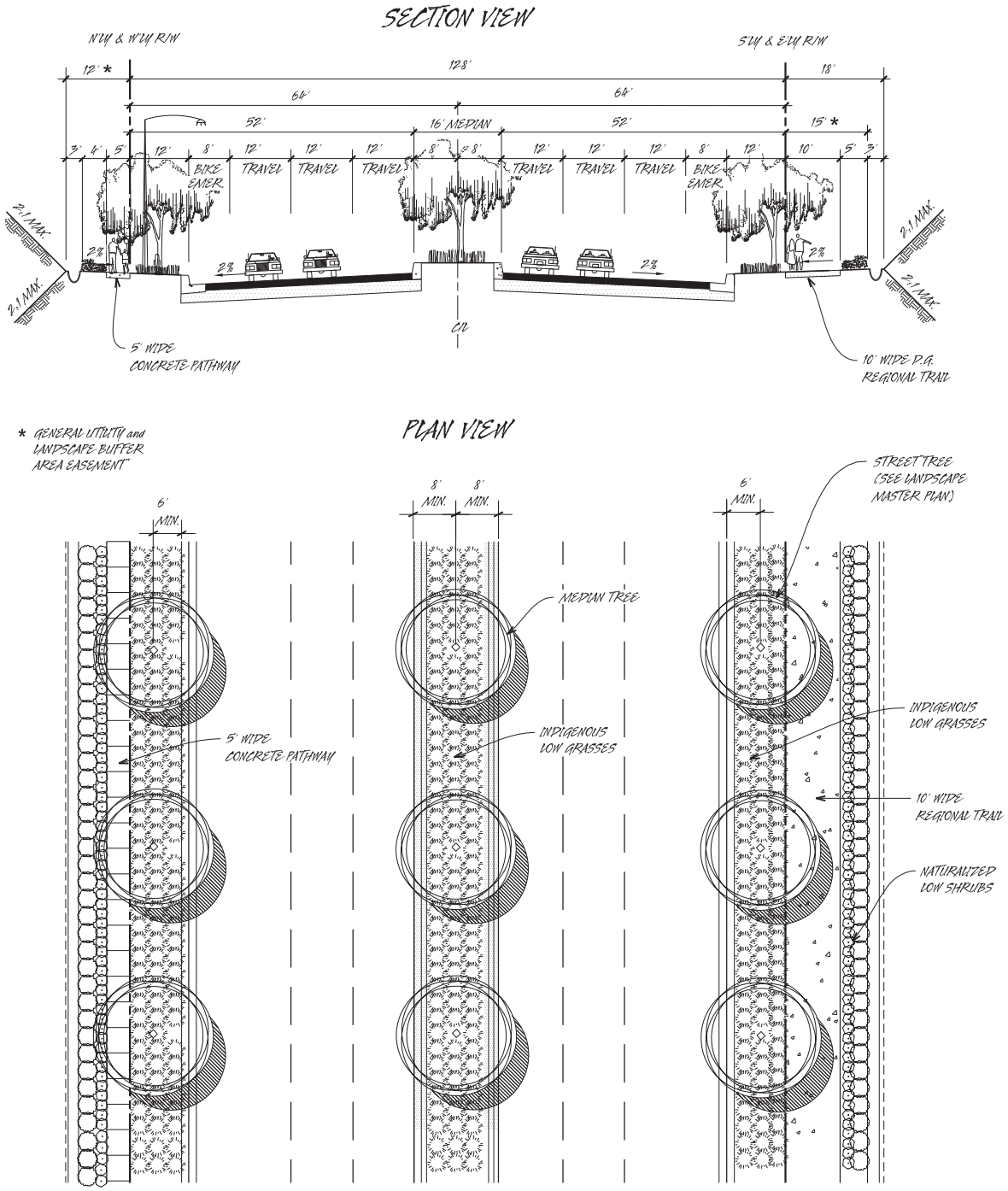



Exhibit 7

*Heritage Road/Rock Mountain Road/Main Street*

Landscape Concept - Not to Scale

***Village Industrial (Class II Collector) Streets***

The interior circulation streets within the village support the Otay Ranch design themes through the use of selected species of trees, shrubs and groundcovers. Trees planted within the parkway (spaced 30' on center) along these streets are Raywood Ash (Fraxinus agustifolia "Raywood").

Exhibit 7 illustrates in cross section and plan view the landscape of the interior circulation streets.

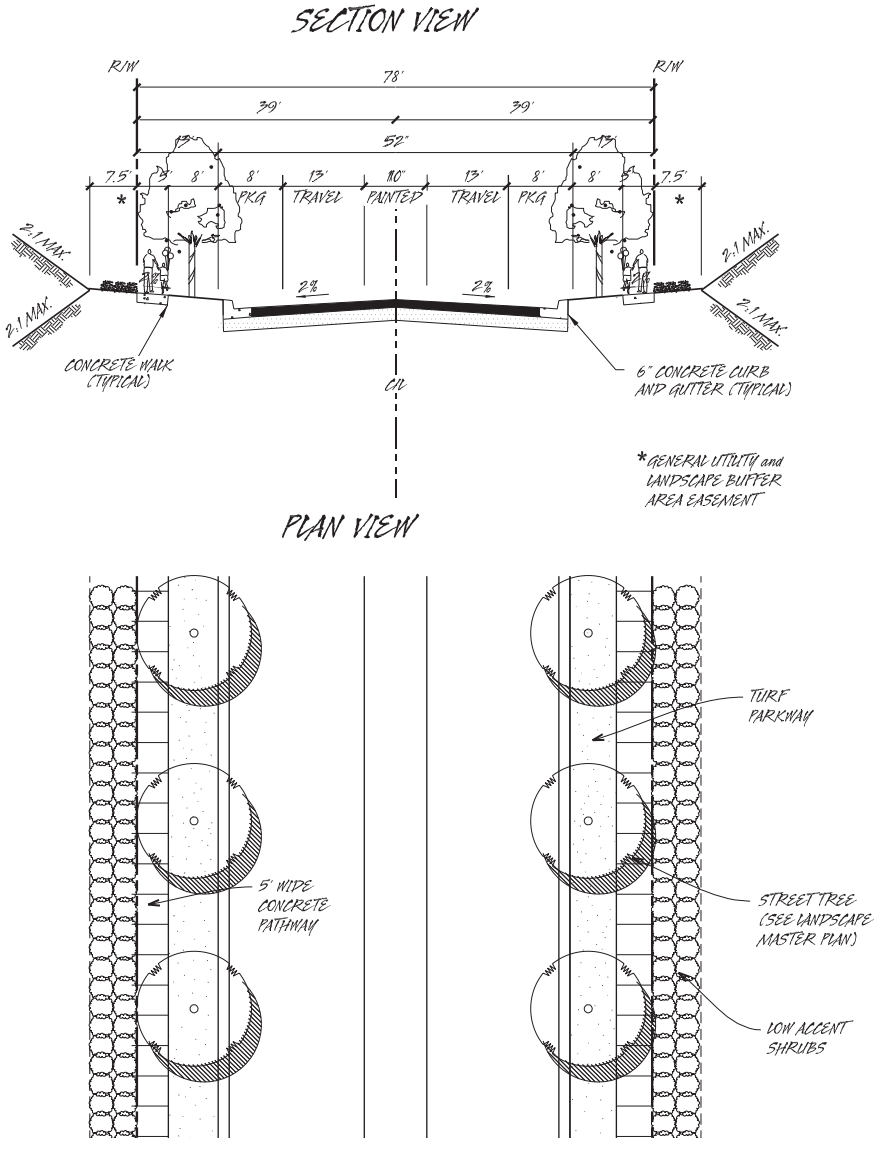



Exhibit 8

*Village Industrial Collector Street*

Not to Scale

***Secondary Village Entry***

The Secondary Village Entry Street is the primary east-west circulation street through Montecito. This street unifies the varied village land uses with a continuous village theme streetscape. The Village Pathway is the primary circulation route for pedestrian and cart alternative village travel and provides a 15' Village Pathway separate from the roadway. The street design includes travel lanes, parallel on-street parking, and landscaped parkways with the Village Pathway located on the north side of the street.

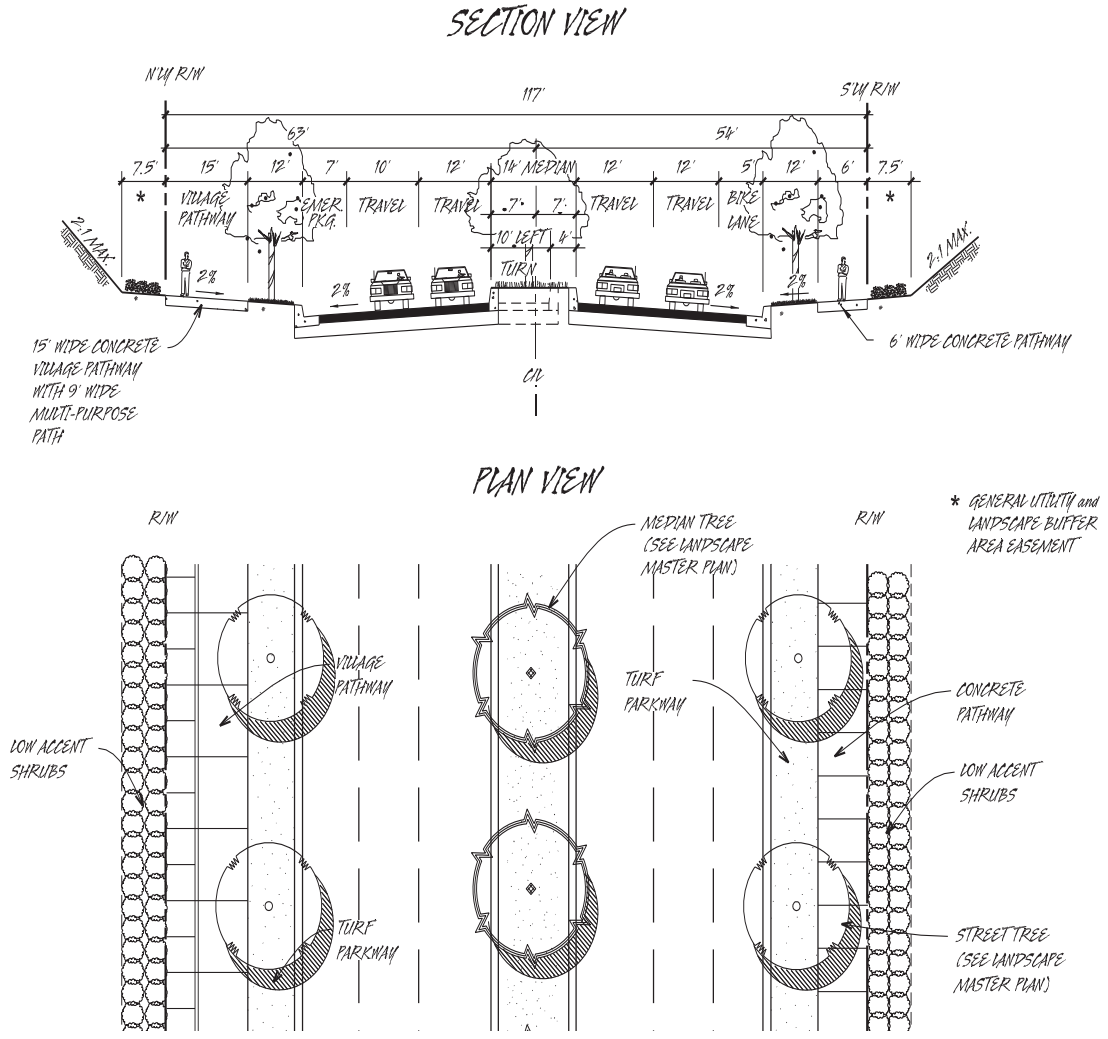



Exhibit 9

*Secondary Village Entry*

Portion of Santa Victoria Road (From Santa Diana Road to Heritage Road and from State Street to Santa Venetia Street) - Not to Scale

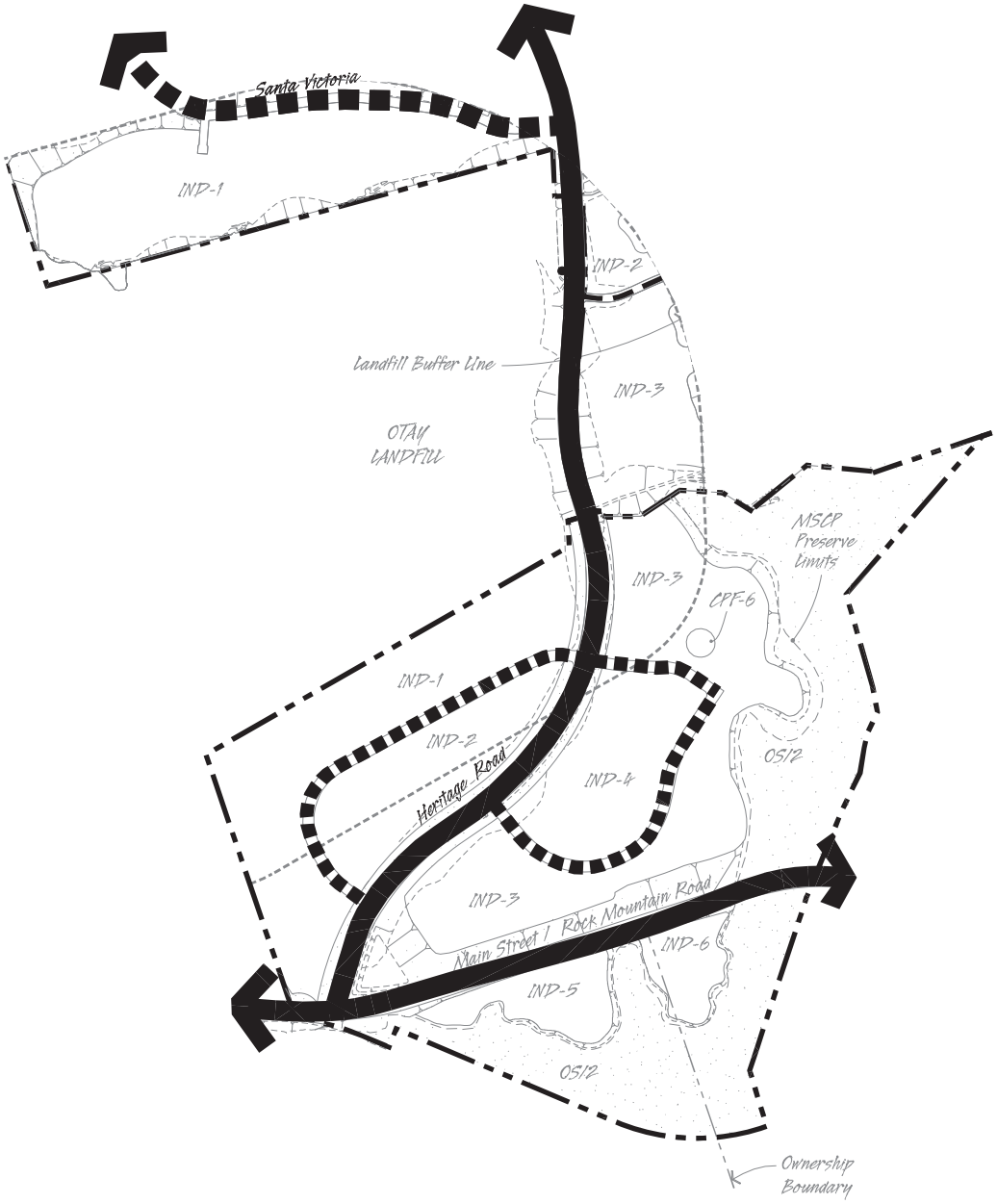



Exhibit 10
*Vehicular Circulation Plan*


LEGEND

REGIONAL TRAILS - 10' SOFT PAVED SURFACE. (ALONG ARTERIALS)

PROMENADE - 6' and 8' PATHWAYS - PAVED SURFACE.

Exhibit 11

Non-Vehicular Circulation

### 3. Slopes

The Master Builder is responsible for implementing landscape on all project slopes. Slopes consist on internal manufactured slopes between development parcels, adjacent to streets and Wolf Canyon. The design of slopes within the development and along streets will provide an aesthetic enhancement to the development, define development sites, screen unattractive views, provide shade and slope stabilization. Slopes adjacent to Wolf Canyon will provide a transition between the development and natural preserve areas. The SPA Preserve Edge Plan provides additional detail about the design of the Wolf Canyon Slope. Exhibits 10 and 11 illustrate typical slope planting. Guidelines for slope design, erosion control and brush management are also provided. Plant lists for slopes are provided at the end of this section

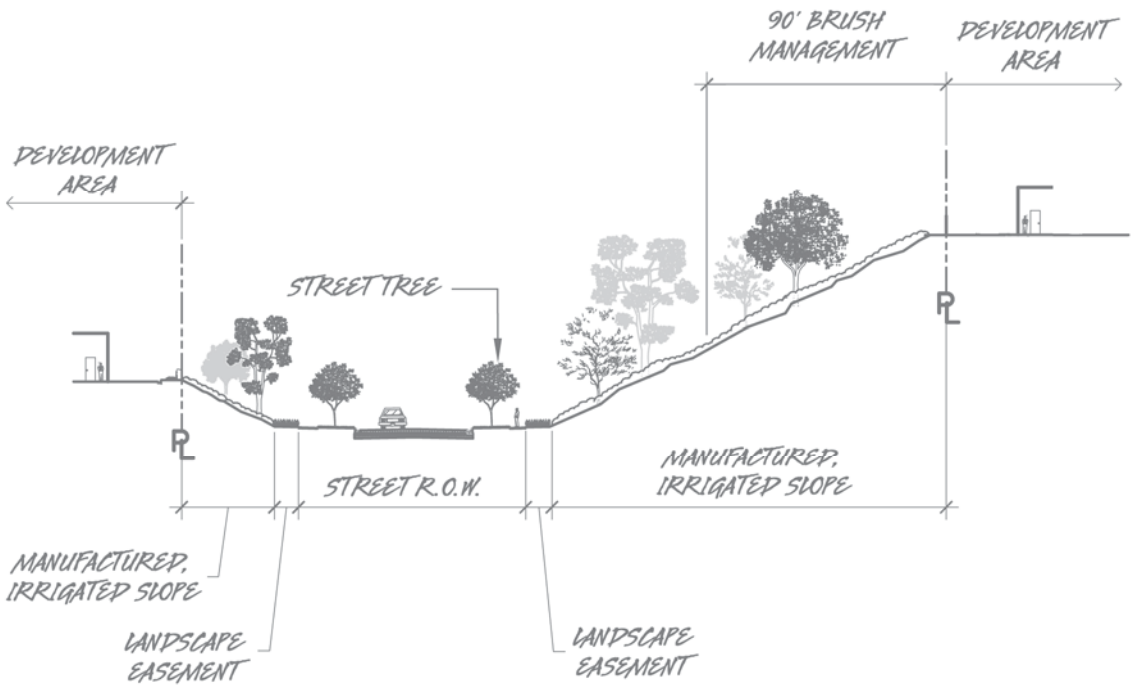



Exhibit 12

*Internal Slope Landscape Concept*

Heritage Road

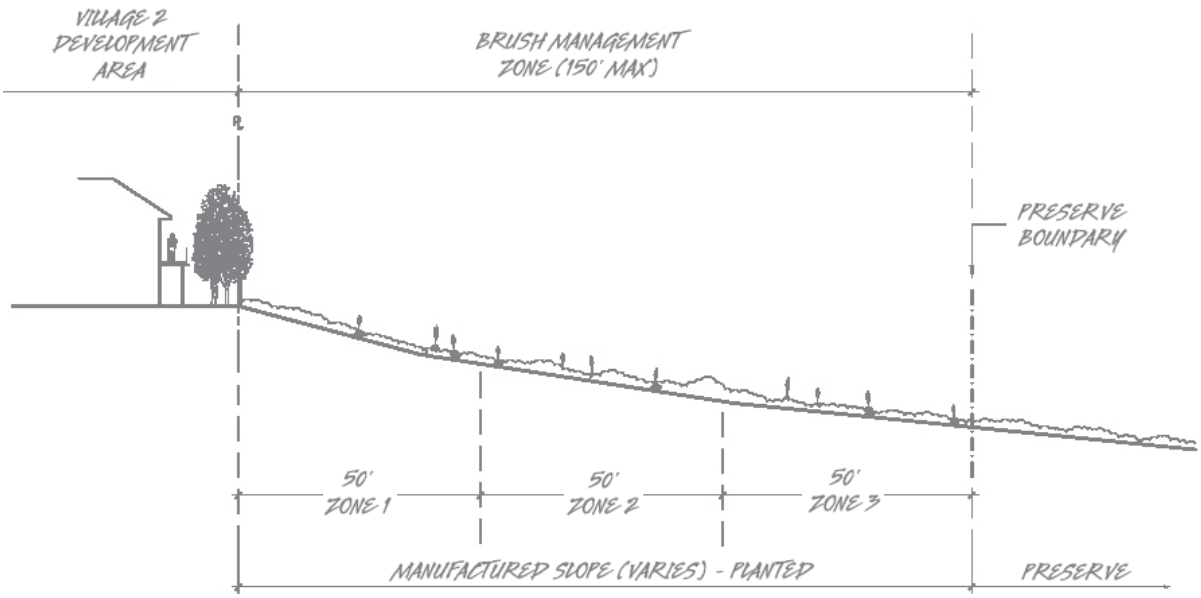



Exhibit 13
*Wolf Canyon Slope Landscape Concept*

### 4. Slope Design and Erosion Control

The following conditions shall be applied to all manufactured slopes:

- Erosion control shall be required for all graded areas to protect newly created slopes or denuded areas from erosion or unsightly appearance.
- Based on the surrounding setting and design intent of the area, compatible plant material should be informally grouped to stabilize and accent the slope.
- Slopes adjacent to Wolf Canyon shall be graded to blend with the natural contours. Slope planting shall consist of native and/or native compatible plant materials, pursuant to the requirements of the Fire Protection Plan; Otay Ranch Village 2, 3 and a Portion of 4 and the Preserve Edge Plan.
- Manufactured slopes along Heritage Road shall be planted to reinforce the Otay Ranch design theme.
- Slopes located within the development area shall be planted to provide vertical interest and buffer adjacent uses.
- Permanent, interior slopes shall be planted with a mixture of compatible, drought tolerant species and shall have a permanent automatic irrigation system.

- Individual development sites shall have permanent plantings and irrigation systems.
- Where necessary, cut slopes shall be serrated to aid in plant revegetation and help retard erosion.

### 5. Brush Management/Fuel Modification

Brush management/fuel modification is required where development abuts native areas adjacent to Wolf Canyon. The fuel modification zone has been incorporated into the proposed development areas pursuant to the requirements of the Chula Vista MSCP Subarea Plan. No fuel modification activities will occur within Preserve areas. Where appropriate, graded landscaped slope areas will be maintained pursuant to Fire Protection Plan requirements and will be outside of the Preserve.

Where the edge condition involves streets and/or front yard areas adjacent to Preserve areas, hard surface and irrigated landscaped areas may be included within the Brush Management Zone, in accordance with any specific requirements of the Fire Department.

## 6. Buffer Zone (Industrial/Residential)

### Description:

The interface between single family residential and industrial land occurs along the western boundary of Village Two and within Village Two West. Through a combination of low berms, trees and potential walls, the homes in these areas are buffered from industrial uses. In some cases, residential or secondary village entry streets provide additional separation between these uses.

### Plant Palette:

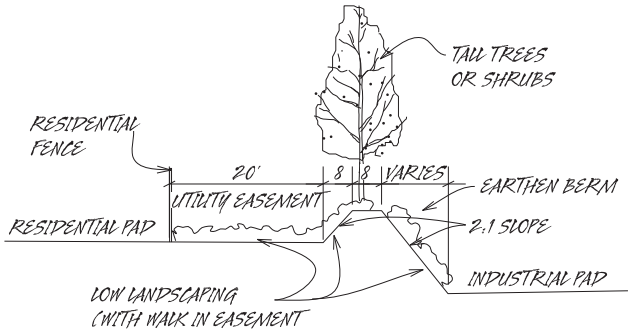
Trees:

Platens racemosa (California Sycamore)
Rhus lancea (African Sumac)
Tristania conferta (Brisbane Box)

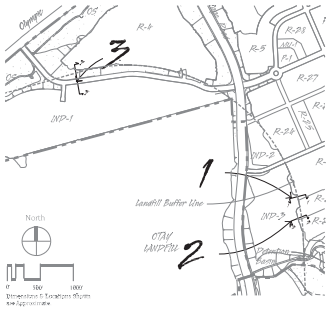
Shrubs:

Ceanothus species (Wild Lilac)
Cistus species (Rockrose)
Heteromeles arbutifolia (Toyon)
Rhus integrefolia (Lemonade Berry)
Rhus ovata (Sugarbush)

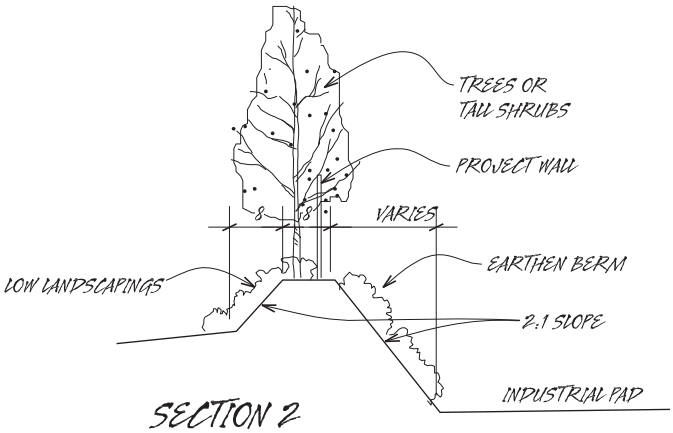
Groundcovers: Ceanothus gloriosus 'Anchor Bay' (Spreading Wild Lilac)
Cistus 'Sunset' (Spreading Rockrose)
Gazania rigens (Gazania)
Myoporum parvifolium 'Putah Creek' (Dwarf Myoporum)
Rosmarinus officinalis 'Huntington Carpet' (Spreading Rosemary)



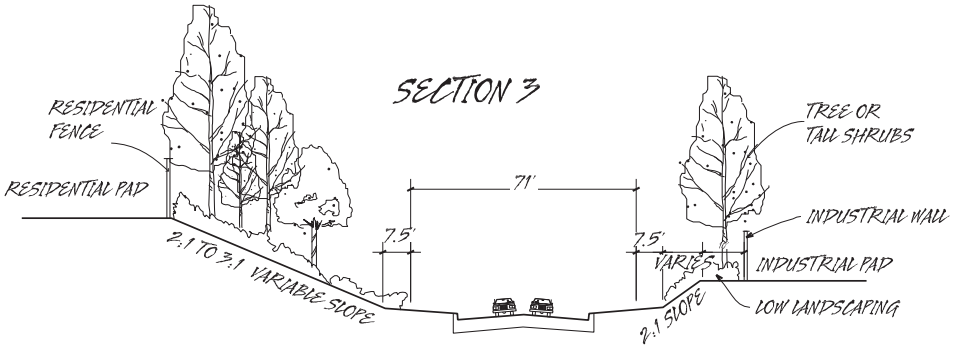

SECTION 1




CROSS SECTION KEY MAP




SECTION 2



## 7. Irrigation

Landscape and irrigation installation shall conform to the City of Chula Vista Landscape Manual. Standard details will be followed to assure uniformity and a high quality of materials and construction. The following general irrigation concepts shall be considered in the design and installation of irrigation systems.

Sprinkler systems shall be circuited according to the following criteria:

- Provide 100 percent coverage
- Zone separately to top, toe and center of slope
- Contour along slope, where possible
- Zone separately to north/east and south/west exposures
- Zone for different plant water requirements
- Different root depth zones
- Irrigation shall be permanent, below ground and automatically controlled for adequate establishment of plant material.
- Temporary irrigation may be used in certain situations, such as slopes planted with native species adjacent to Wolf Canyon.
- Irrigation systems shall be installed as soon as possible after grading, and prior to amending soils, plant installation or any hydroseeding.
- Pop-up operation type sprinkler heads shall be used adjacent to all walks, drives, curbs, parking areas and public rights-of-way to avoid breakage and reduce maintenance costs.
- Irrigation sprinkler heads used to water slopes shall have application rates which reduce the amount of run-off and shall be of a type, such as stream rotors, which do not apply water in a fixed, steady stream.
- Sprinklers with proper nozzles shall be selected to compatibly provide water to their landscape. Soil information shall be obtained prior to the design of any irrigation system.
- Trees shall be irrigated with bubbler systems.
- As it becomes available, recycled water is proposed to be used for all commonly maintained slopes, parks, public rights-of-way including landscape buffer easements and landscaped areas of commercial and industrial sites.
- Proper irrigation techniques shall be used throughout the village to maximize efficient water usage.
- The first 50' of the Brush Management Zone (adjacent to Wolf Canyon) may be permanently irrigated.

- Temporary above ground irrigation may be used outside the first 50' of the Brush Management Zone to assist with plant establishment and ensure slope stability subject to approval of the Director of Planning and Building.
- Temporary irrigation system removal program subject to approval of the Director of Planning and Building.

## 8. Plant Palettes

The following plant lists have been selected to complement the village design. This plant palette is not intended to be all-inclusive or restrictive and is subject to approval by the Fire Department. Street tree species are subject to approval by the Department of General Services, Landscape Division and the Department of Public Works.

| | |
|---|---|
| Village Entry Accent Tree: | Pinus Eldarica (Afghan Pine) |
| Village Entry Shrubs: | Carex, sps. (Sedge) |
| Heritage Road / Main Street / Rock Mountain Road Tree: | |
| | Schinus molle (California Pepper) |
| Village Industrial Street Tree: | Fraxinus augustifolia 'Raywood' (Raywood Ash) |
| Interior Slope Trees: | Hetermomeles arbutifolia (Toyon) |
| | Rhus lancea (African Sumac) |
| | Tristania conferta (Brisbane Box) |
| Interior Slope Shrubs: | California Sagebrush (Artemesia 'Canyon Grey') |
| | Cistus species (Rockrose) |
| | Rhus integrifolia (Lemonade Berry) |
| | Rhus ovata (Sugarbush) |
| Wolf Canyon Slope: | Shrubs:Heteromeles arbutifolia (Toyon)* |
| | Isomeris arborea (Bladderpod)* |
| | Lycium andersonii (no common name)* |
| | Prunis ilicifolia (Hollyleaf Cherry)* |
| Wolf Canyon Slope: | Rhamnus crocea (Redberry)* |
| | Ribes speciosum (Fuchsia flowering gooseberry)* |
| | Simmondsia chinensis (Goatnut)* |
| | Encelia californica (Bush Sunflower) |
| | Eriophyllum confertiflorum (Golden Yarrow) |
| | Hemizonia fasciculate (Common Tarplant) |
| | Lupinus succulentus (Arroyo Lupine) |
| | Nassella pulchra (Purple Needlegrass) |
| | Sisyrinchium bellum (Blue eyed grass) |
| | Opuntia prolifera (Coast cholla) |
| | Opuntia littoralis (Coast prickly pear) |

Opuntia oricola (no common name)

Cylindropuntia californica var. californica (Snake cholla)

Yucca schidigera (Mohave yucca)

Distichlis spicata (Salt grass)

Yucca whipplei (Our Lord's candle)

Viguiera laciniata (San Diego sunflower)

*Containers only, others can be hydroseeded

## C. SITE ELEMENTS

### 1. Signage

The Master Developer will be responsible for implementation of project entry monument signs located on Heritage Road. The Master Developer will also provide appropriate street signs in the public right-of-way as identified on the street improvement plans by the City Engineering Department.

The project entry monument will be integrated into the overall Otay Ranch design theme through the use of similar forms, materials and colors. Monumentation signage shall adhere to the following guidelines:

- The sign location shall conform to all City requirements for sight lines and sidewalk clearance.
- The maximum sign dimensions shall be thirty (30) square feet.
- The copy area shall not exceed fifteen (15) square feet.
- Text and logos must fit proportionally into the face of the sign.
- Signs may be externally illuminated by ground level lights.

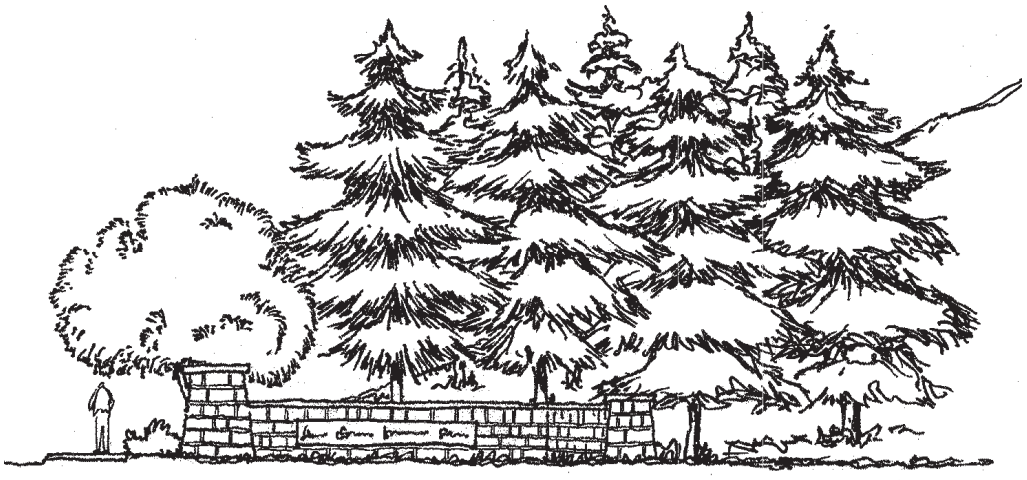


Exhibit 14

*Conceptual Entry Monument*

Conceptual design for the monument sign

## 2. Lighting

The Master Developer will implement street lighting as a component of the construction of Heritage Road and the Village Industrial Streets. The street lighting will adhere to the following guidelines:

- The lighting fixtures will be in conformance with Otay Ranch and the City of Chula Vista design requirements.
- Shielded fixtures with well-defined cut-off limits shall be used where necessary to confine illumination.

Lighting adjacent to the Wolf Canyon natural preserve area shall be in conformance with the project Preserve Edge Plan. Exhibits 15 and 16 illustrate the street lighting concepts.

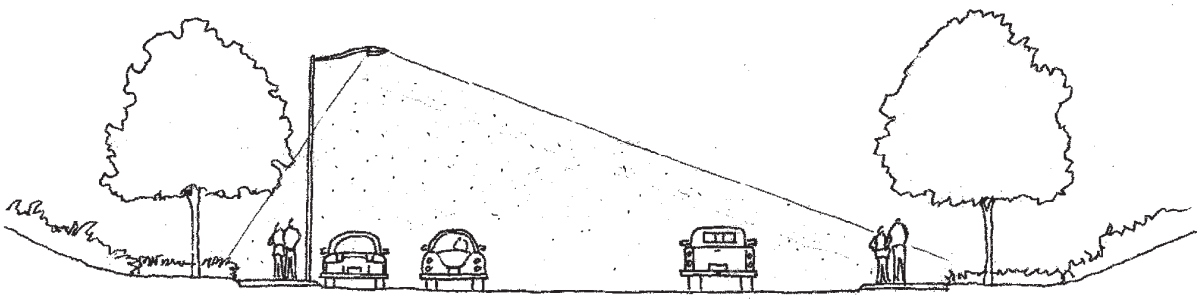


Exhibit 15
*Lighting - Industrial Street*

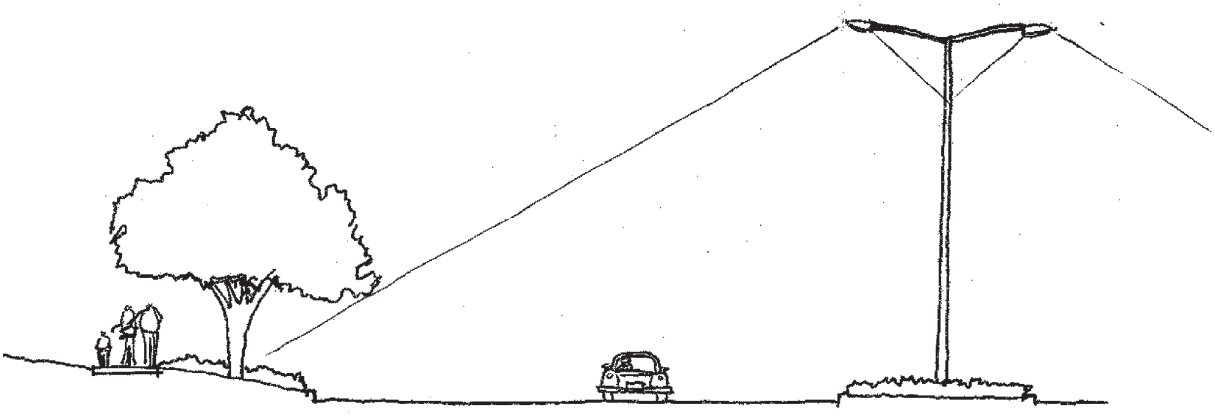
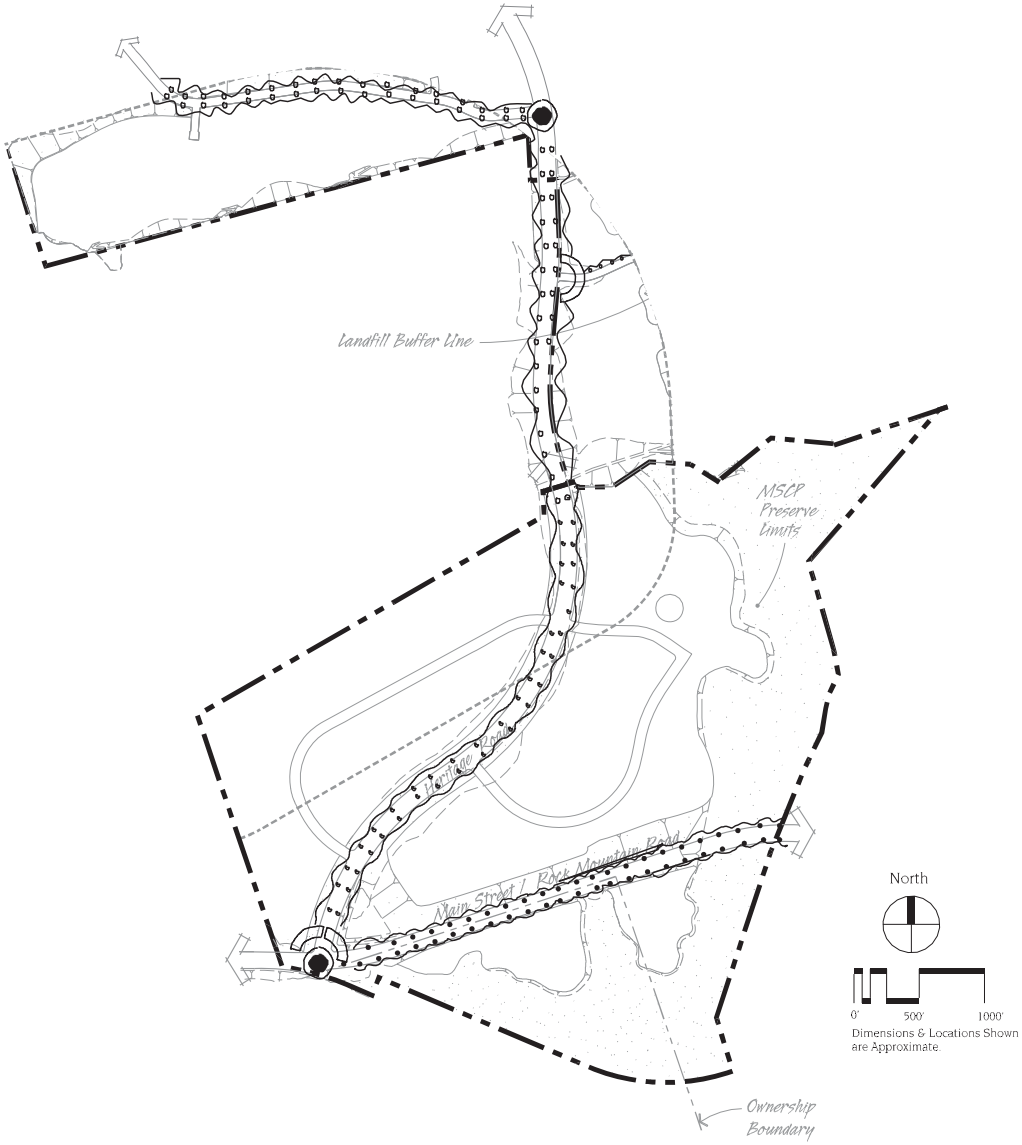


Exhibit 16
*Heritage Road Lighting Concept*




LEGEND

ARTERIAL THEME STREET (LA MEDIA, HERITAGE)

PROMENADE STREET

MAJOR INTERSECTION LIGHTING

RANCH WIDE ENTRY

VILLAGE ENTRY

Exhibit 17

Lighting Concept Plan

### 3. Walls & Fencing

Walls and fencing will be designed to integrate the plan area into the overall Otay Ranch community. The walls and fencing will unify the development as a common design element. The primary functions of the walls and fencing are to provide security, screening and noise attenuation. The Master Developer will implement perimeter walls and fencing at the project perimeters. Exact location of perimeter fencing to be determined at the Precise Plan level to meet Preserve edge requirements. The location and design of noise attenuation walls shall comply with subsequent acoustical analysis studies. View fencing may be used to create an open, welcoming image wherever noise attenuation or visual screening are not needed. The precise type of fencings will be determined when final grading and acoustical studies have been completed. The exact materials shall be selected concurrent with development of the Project Master Plan. Exhibits 17 and 18 provide a conceptual design for walls and fencing. The following are guidelines for wall and fencing design:

- Walls shall be made of a textured surface material that is compatible with the Otay Ranch theme.
- Walls and fences should complement the project's architecture.
- Walls and fences within front and exterior side yards of commercial sites should be avoided.
- Unless walls are required for screening or security purposes they should be avoided.
- Security fencing should incorporate solid pilasters, or short solid wall segments and view fencing.
- Gates should be provided in walls or fences where necessary to allow for emergency access.
- Long expanses of walls should incorporate recesses, offsets, pilasters or similar measures to avoid monotony.
- Trees, shrubs and vines should be used to soften the appearance of walls and fences.
- Wall and fencing heights shall be eight and one-half (8-1/2) feet from the highest finished grade unless additional height is required for noise attenuation.
- Graffiti control finishes shall be applied where appropriate.
- Chain link fences should not be visible from streets.
- High perimeter walls and walls topped with barbed wire or razor wire are strongly discouraged.

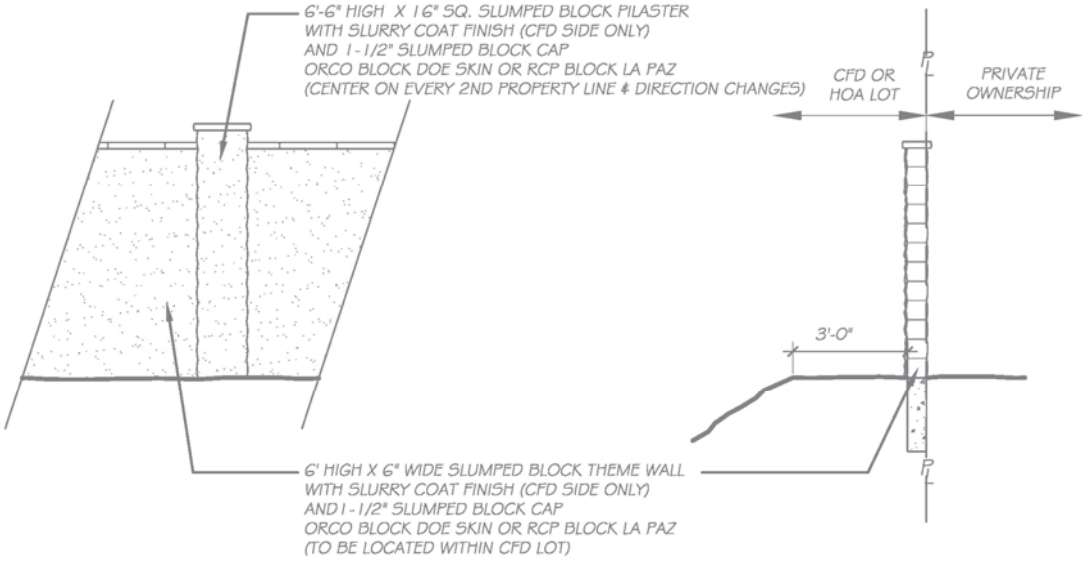

Note: Location of Perimeter Fencing to be Determined on the Village 3 landscape Master Plan.

LEGEND

COMMUNITY THEME VIEW WALL - OPEN VIEW WITH METAL PICKET or GLASS PER SOUND OR FUEL MODIFICATION REQ'MTS

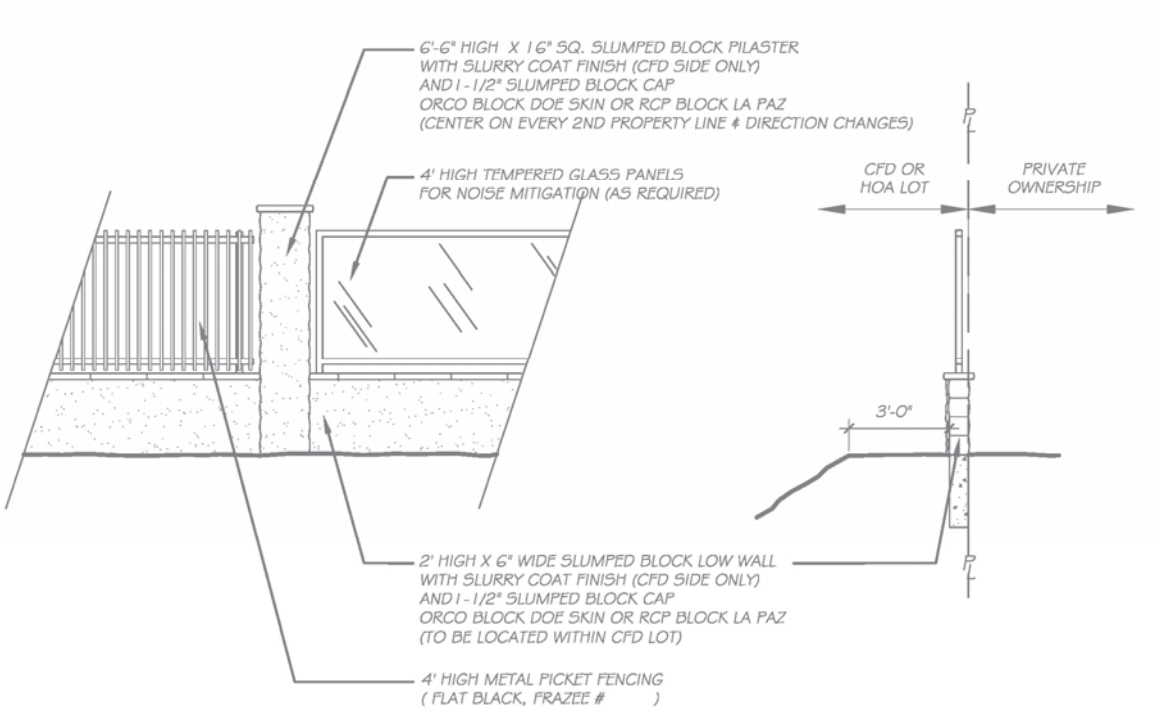
Exhibit 18

Wall and Fencing Concept Plan




Community Enhanced Theme Wall

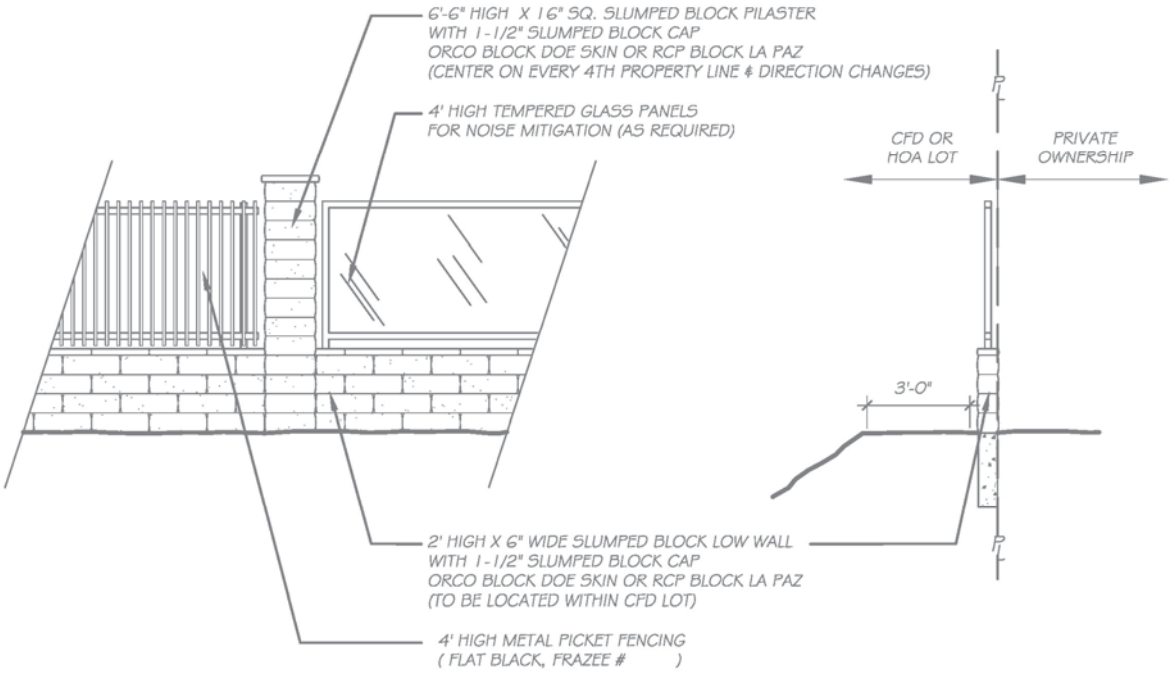
Note: 6' high metal picket fencing maybe used where appropriate to preserve views.



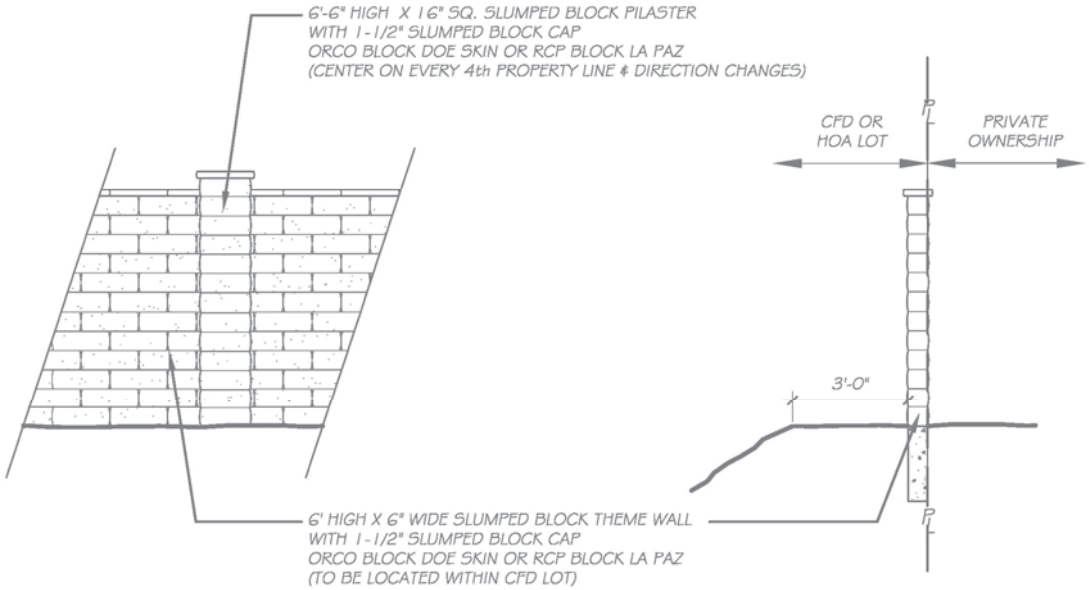

Community Enhanced Theme View Wall

Exhibit 19

*Conceptual Design for Walls & Fencing*




Community Theme View Wall




Community Theme Wall

Exhibit 20

*Conceptual Design for Walls & Fencing*

## D. MAINTENANCE STANDARDS

The developer will be responsible for site element and landscape maintenance during project implementation. Ultimate responsibility for maintenance will belong to individual private property owners, Community Facilities District, Business Associations and public agencies. Definition of these responsibilities will occur during the subdivision review process. The following summarizes how landscape maintenance responsibilities are intended to be divided within the village.

### 1. Individual Private Property Owner Maintenance

The individual property owner will be responsible for maintenance within privately owned areas.

### 2. Community Facilities District and Business Association

Areas not maintained by private property owners or a public agency will be maintained through Community Facilities Districts (CFD) and Business Associations. Such areas will include common areas, common slope areas, common open space, entry landscaping and walls facing the public right-of-way. Certain public landscaped areas may also be included, as determined by the Director of Public Works, such as detention basins and enhanced median and parkway landscaping in the public right-of-way.

### 3. Public Agency Maintenance

Public agencies will be responsible for maintenance on publicly owned land. These areas include landscaping within street and highway rights-of-way (unless maintained by a business association or a community facilities district), Wolf Canyon Preserve and other similar public lands.

### 4. Public Works Department

Public streets, walks, parkways and trails which are located on public land and drainage structures other than those designed as swales or brow ditches will be the maintenance responsibility of the Public Works Department (unless maintained by a business association, a community facilities district or individual property owners).

# III. Project Design Guidelines

The following guidelines are intended to direct the individual project developer. The objective of these guidelines is to create projects that contribute to the overall design continuity of the business park while maintaining their own individuality. Guidelines are provided for site planning, architecture, landscaping, signage and lighting.

## A. SITE DESIGN GUIDELINES

The SPA Planned Community (PC) District Regulations contain development standards, including allowable lot areas, setbacks, building heights and parking requirements. The following guidelines are intended to address additional practical and aesthetic considerations of site design:

### 1. Compatibility

- The arrangement of structures, parking and the internal street system should recognize the site characteristics and should relate to the surrounding built environment in pattern, function, scale, character, and materials.
- Residential uses should be buffered from incompatible industrial development. Intensified landscaping and appropriate setbacks and building orientation should be utilized to provide adequate separate between land uses.

### 2. Site Entry Design

- Entry areas to industrial developments should be enhanced by ornamental landscaping, low profile monument signage and decorative paving.

### 3. Building Siting

- Building siting should consider the context of the entire industrial development, the location of compatible uses, the location of major traffic generators as well as site characteristics.
- The placement and design of structures should foster pedestrian access and circulation.
- Industrial site design should provide:
  - convenient public access and visitor parking
  - service areas located at the sides and rear of buildings
  - screening of storage, work areas, and mechanical equipment
  - storage and service area screen walls, as required

- Site buildings along industrial frontages, to the greatest extent possible. Provide variable building setbacks in order to avoid long monotonous building facades and create an interesting street scene.
- Whenever possible, new structures should be clustered to create plazas and courtyards.

### 4. Vehicular Access/Circulation/Parking

- Site access and internal circulation should promote safety, efficiency and convenience. Conflicts between vehicles and pedestrians should be avoided. Continuous circulation should be provided throughout the site to the greatest extent possible. Dead-end driveways should be minimized. Adequate areas for maneuvering, stacking, truck staging, and loading and emergency vehicle access should be accommodated on site.
- The number of site access points should be minimized and located as far as possible from street intersections. The use of common or shared driveways is encouraged and in some cases may be required. Designs which encourage the use of streets for "internal circulation" should be avoided.
- Driveway entry locations should be coordinated with existing or planned median openings and driveways on the opposite side of the street.
- Loading and service areas should be provided with separate access and circulation whenever possible.
- Parking should not dominate street frontages. Parking areas should be screened by buildings and landscaping.
- Parking lots which accommodate a significant number of vehicles should be divided into a series of connected smaller lots.

### 5. Pedestrian Circulation

- Placement of primary vehicle access points to the project site in close proximity to major building entries should be avoided in order to minimize pedestrian and vehicular conflicts.
- Clearly defined pedestrian paths should be provided from parking areas to primary building entrances and sidewalks along the site's perimeter.
- Design parking areas so that pedestrians walk parallel to moving cars. Minimize the need for pedestrians to cross parking aisles and landscape islands to reach building entries.
- Pedestrian walkways should be accessible, safe, visually attractive and well defined by decorative pavement, landscaping, low walls and low-level lighting.

- Safe and convenient pedestrian walkways should be provided between buildings and parking areas.
- Pedestrian access should be provided between transit stops and building entrances.

### 6. Plazas/Courtyards and Passive Recreational Areas

- Building placement that creates opportunities for plazas, courtyards, patios or outdoor dining areas is strongly encouraged.
- Shade trees or architectural elements which provide shelter and relief from direct sunlight should be provided within plazas and courtyards.
- Landscaping, water features and public areas should be incorporated into plaza and courtyard design.

### 7. Public Safety Through Design

- Electronic surveillance and security hardware should be as invisible and unobtrusive as possible. If security grilles are necessary, they should be architecturally integrated within the overall building design theme. The use of scissor grilles is strongly discouraged.
- Lighting should be designed to satisfy functional and decorative needs. Security lighting should be designed as part of the overall lighting plan rather than a single stand-alone element.
- Safety behind buildings should be ensured through: 1) adequate security lighting for parking areas and pedestrian ways; 2) limited access (walls, fences, gates, shrubs); 3) signage; 4) introduction of activities (e.g., rear entrances for commercial activities) that increase surveillance; 5) surveillance through windows or with cameras; and 6) ongoing maintenance of storage areas and alleys.
- Building lighting should complement the architectural style of the building while providing illumination of building facades and entrances.
- Lighting should be sufficient for sidewalk and street illumination.
- Building address numbers should be visible from the public right-of-way.
- Landscaping should be planted and maintained to allow visibility and eliminate areas of potential criminal activity.
- Delineate the separation between public and private spaces with paving, building materials, grade separations or with physical barriers such as landscaping.

## B. ARCHITECTURAL DESIGN GUIDELINES

The goal of building design guidelines is to create a consistent, harmonious business park, while allowing for variety and project individuality. Design continuity can be created by sensitive location and massing of structures and a limited palette of building materials and colors.

### 1. Building Design

While there is no specific architectural style, detail, form, and materials requirement, each property owner is encouraged to work within the context of the Otay Ranch Community, adjacent properties, and individual site in establishing an architectural expression for their property.

Since the specific characteristics of each site vary widely, the Design Review Committee will, in evaluating proposed improvements, seek to determine that the unique constraints and opportunities have been given adequate consideration.

- All buildings shall be designed by an architect registered in the State of California and bear his or her seal when submitted for design review.
- Special architectural attention shall be given to building elevations facing open space areas.
- No mechanical equipment or vent shall be placed on the exterior surface of any building wall that can be viewed from a public street.
- No particular architectural style is required for industrial development. However, the architectural style shall be compatible with adjacent uses. High quality, innovative and imaginative architecture is encouraged.
- The selected architectural style/design should consider compatibility with surrounding character, including harmonious building style, form, size, color, materials and rooflines.
- The architect is expected to utilize variations in form, building details and siting in order to create visual interest. In all cases, the selected architectural style should be employed on all building elevations.
- A unified, identifiable image should be projected by individual buildings within the industrial/business parks through the use of similar and/or complementary colors, materials, roof forms, signage, decorative pavement and architectural style.
- Buildings should be segmented in distinct massing elements. Building facades should be articulated with architectural elements and details. Vertical and horizontal offsets should be provided to minimize building bulk.

- Variable building elevations along linear street frontages are encouraged. Building entries should be readily identifiable. Use recesses projections, columns and distinctive materials and colors to articulate entrances.
- Employ various building forms to create visual character and interest.
- Long (over 100') unarticulated building facades are not acceptable. Varied front setbacks are encouraged.
- All wall surfaces visible to the public should be architecturally enhanced. Front and side wall elevations should provide building offsets and architectural details.
- Varying building heights/massing and setbacks to define different functions such as offices and warehousing is encouraged.
- Vertical architectural elements such as towers should be used as focal points.
- Stairways should be designed as an integral part of the building architecture.
- Roof design should be an integral component of the overall building architecture. Long continuous rooflines are not acceptable. Multiple roof planes and offsets are encouraged.
- Gutters and downspouts should be concealed, unless designed as a decorative architectural feature.
- The size and location of doors and windows should relate to the scale and proportions of the building elevation on which they are located.

### 2. Materials and Colors

Materials and colors should be used to create visual interest. When buildings are located within an industrial/business park, utilize colors and materials on individual buildings which are complementary to the design theme and consistent with the color/materials palette for the overall industrial/business park development.

The following materials are permitted:

- Tilt-up concrete with textures and colors.
- Masonry Block with textured surface.
- Steel frame with glass or masonry and glass exterior (glass shall not exceed 70% of the exterior)
- Enameled metal panels, wood, glass and stucco may be used as decorative elements with tilt-up or masonry building system.

- Tile, brick and stone accents.
- Sloped roof materials may be ribbed metal, clay or concrete tile.
- Exposed gutters should be colored to match fascia or wall materials. Exposed downspouts should be colored to match the surface to which they are attached.
- Use various types of building cladding to produce different textures, shade and shadow effects.
- Materials should be chosen to withstand abuse by vandals or accidental damage by machinery. False facades and other simulated materials and ornamentation are discouraged.

The following materials are prohibited:

- Sheet or corrugated metal, asbestos or similar materials used on exterior walls.

The following color selection guidelines should be utilized:

- Colors shall be limited to a maximum number of three, exclusive of minor trim elements.
- Colors shall be coordinated with materials and finishes on all exterior building elevations to achieve a total continuity of design.
- The predominant building color shall be light neutral, earth tone or pastel colors such as off-white, warm gray or beige.
- Accent colors may be darker tones of the main building color. Limited use of bold, bright colors, black, white or metallic may be used for accents.
- Colors should be compatible with the surrounding business park.
- Vents, louvers, exposed flashing, tanks, stacks, ductwork, overhead, rolling and service doors are to be painted.
- All screens shall be painted a neutral color or a color consistent with the building color scheme.
- Lightning protection devices shall be painted a neutral color that blends into the skyline.
- Brightly-colored buildings are discouraged.

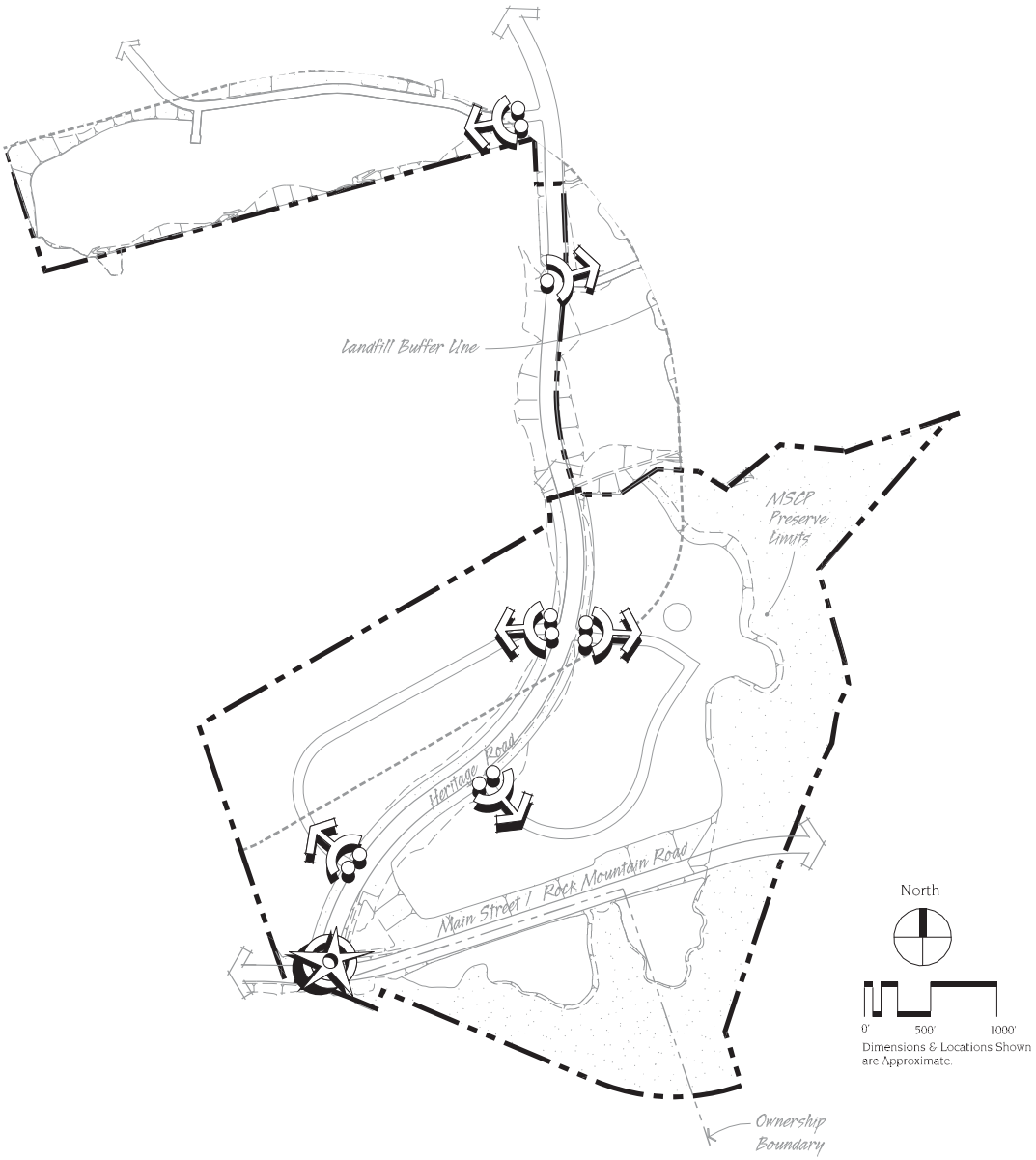



Exhibit 21
*Entry Identity Locations*

## 3. Lighting

***General:***

- All site, landscape and building exterior lighting shall be of a configuration, style and finish color that compliments the architectural theme and materials established by the building architecture.
- Shielded fixtures with well-defined cut-off limits shall be used where necessary to confine illumination to on-site areas only.
- Lighting adjacent to the Wolf Canyon natural preserve area shall be in conformance with the project Preserve Edge Plan.
- Lighting shall be primarily for site function and security to conserve energy, support astronomical dark skies and avoid nuisance lighting.

***Accent Lighting:***

- Accent lighting may be used if it contributes to the overall site functional and security lighting program.
- Architectural lighting shall be integrated into building design.
- Architectural accent lighting shall originate from concealed or inconspicuous source locations.
- Accent lighting may be low-pressure sodium or mercury vapor; no color lights shall be used.
- Walkway and landscape feature lighting are encouraged as necessary or desirable for both aesthetic and security purposes.
- Pedestrian scale/decorative light fixtures are encouraged within plazas and courtyards.

***Security Lighting:***

- Wall mounted security light pack to be used only at rear and interior side of buildings.
- Security lighting shall use low-pressure sodium fixtures.

***Parking and Service Yards Lighting:***

- Lighting for parking and service yards shall be shielded low-pressure sodium directed downward, and have zero cut off.
- Fixtures shall be pole mounted, twenty-five (25) foot maximum height and located above paved surfaces.

## 4. Screening

- Dense landscape screening shall be used between pad elevations to minimize views of rooftops from adjacent streets and buildings.

- Dense landscape screening shall be used to minimize views of architecture, loading areas, and vehicular use areas from the Wolf Canyon and adjacent open space area viewsheds.
- Telephone, electric service and other utilities shall be located to be unobtrusive and screened by decorative walls and landscaping to the extent allowed by utility providers.
- All loading areas shall orient away from front primary elevations (street or side with street frontage). In no case shall these facilities be visible from any off-site location. Screening may be accomplished with solid walls, landform grading and landscaping.

### 5. Walls & Fencing

- All fencing or walls shall provide a sight clearance distance as required by the City.
- Fences and walls shall be designed to be compatible with on-site buildings in terms of color and/or materials.
- Solid fences may be constructed of wood, brick, decorative block and stone or framed stucco with decorative metal.
- Open style fencing shall be constructed of wood, ornamental iron or other similar decorative material.
- Open style fences shall be landscaped with vines, shrubs and /or trees to soften the appearance.
- The use of vinyl coated chain link is only permitted along interior side and rear property lines where not visible from the public right-of-way.
- Chain link, barbed wire, concertina wire or similar security devices are discouraged and are not acceptable in view of the public right-of-way.
- All gates shall be constructed of solid view-obscuring material except vehicular gates.

### 6. Hardscape

- Walkways, plazas, building entries and similar paved areas shall be designed with materials and colors that are compatible with the project architecture.
- Paving materials should complement the architectural design. The use of stamped concrete, stone, brick, pavers, exposed aggregate or colored concrete is encouraged.
- Raised planters, curbs and walkways of appropriate paving materials shall be used to define and protect landscape areas.
- Outdoor plaza and seating areas are encouraged to be provided for employee use during lunch and break periods.

- All pedestrian areas shall be designed for comfortable use, security and accessibility.
- Boulders, gravel, decomposed granite, pavers and similar materials may be incorporated into the landscape design as a water conservation measure.
- Street furniture, benches, mailboxes and seat/walls shall be integrated into the overall project design and be compatible in style, materials and colors.

## C. LANDSCAPING

### 1. General

- These guidelines shall be used in conjunction with the Otay Ranch Overall Design Guidelines, the city of Chula Vista Design Manual and Landscape Manual, as well as the appropriate Federal, State, and County codes.
- All landscape and irrigation plans shall be prepared by a licensed California landscape architect and shall be submitted to the City of Chula Vista, and to the Master Developer for review and approval prior to the start of construction. All submissions shall demonstrate compliance with these guidelines.
- Landscaping should define entrances to buildings and parking lots, buffer incompatible uses and screen outdoor storage, loading and equipment areas.
- Landscaping should be in scale with adjacent buildings and of an appropriate size and maturity to accomplish its intended purpose.
- Utilize grade differential and/or berming in conjunction with landscaping to reduce the appearance of building mass and height along street frontages.
- When industrial uses are located adjacent to less intense uses, additional setbacks, walls, screening and/or landscaping should be provided to mitigate potential adverse effects to neighboring properties.
- Landscaped areas should generally incorporate planting materials utilizing a three tiered system: 1) grasses and ground cover; 2) shrubs and vines; and 3) trees.
- All areas not covered by structures, service yards, walkways, driveways and parking spaces should be landscaped, in accordance with City requirements.

The following design concepts should be utilized:

- Specimen trees in informal groupings or rows at major focal points.
- Use of flowering vines both on walls and arbors or trellises
- Use of planting to create shadow and patterns against walls
- Trees to create canopy and shade, especially in parking areas and passive open space areas
- Berms, plantings and walls to screen parking lots, trash enclosures, storage areas, utility boxes, etc.

- Landscaping shall be in conformance with the City's requirements for sight lines and access.
- Design continuity in the business park will be partially achieved through the use of an established plant palette for parking areas, areas between developments or "transition zones," and screening. A recommended plant palette is included at the end of this section.

***Transition Zones:***

- A uniform area of landscaping shall be located between project sites, planted with trees, shrubs and groundcovers.
- Transitions zones shall be designed to separate and identify individual developments and to provide screening and buffering between incompatible uses.

***Screening:***

- Screening to conceal unattractive views, such as trash enclosures and storage areas, shall be accomplished through the use of trees, vines, shrubs and earth berms in addition to walls and fences.
- Dense groves of trees and tall shrubs shall be used to provide screening and soften the appearance of walls and fences.

***Parking Areas:***

- Parking lot landscaping should accent driveways, frame the major circulation aisles and highlight pedestrian pathways.
- Parking areas should be planted with a grove pattern of trees. Trees should be planted in diamond planters between rows of parking spaces and along the end of parking rows.
- Parking lots will require submittal of landscape, planting and irrigation plans.

## 2. Irrigation

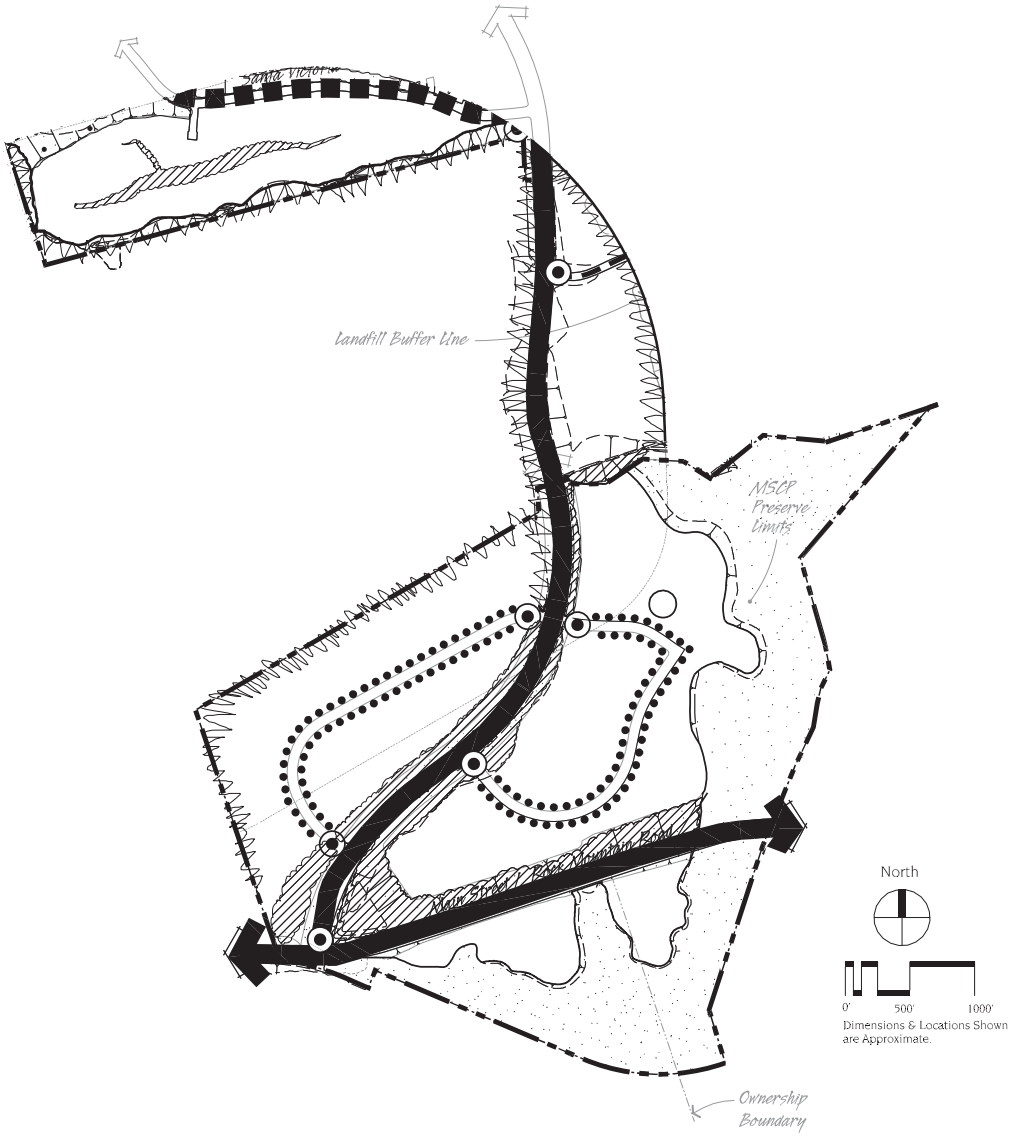
Landscape and irrigation installation shall conform to the City of Chula Vista Landscape Manual. Standard details will be followed to assure uniformity and a high quality of materials and construction. The following general irrigation concepts shall be considered in the design and installation of irrigation systems.

- Sprinkler systems shall be circuited according to the following criteria:
- Provide 100 percent coverage
- Zone separately to top, toe and center of slope
- Contour along slope, where possible
- Zone separately to north/east and south/west exposures
- Zone for different plant water requirements
- Different root depth zones
- Irrigation shall be permanent, below ground and automatically controlled for adequate establishment of plant material.
- Temporary irrigation may be used in certain situations, such as slopes planted with native species adjacent to Wolf Canyon. Any proposed removal program is subject to approval by Director of General Services and Public Works.
- Irrigation systems shall be installed as soon as possible after grading, and prior to amending soils, plant installation or any hydroseeding.
- Pop-up operation type sprinkler heads shall be used adjacent to all walks, drives, curbs, parking areas and public rights-of-way to avoid breakage and reduce maintenance costs.
- Irrigation sprinkler heads used to water slopes shall have application rates which reduce the amount of run-off and shall be of a type, such as stream rotors, which do not apply water in a fixed, steady stream.
- Sprinklers with proper nozzles shall be selected to compatibly provide water to their landscape. Soil information shall be obtained prior to the design of any irrigation system.
- Trees shall be irrigated with bubbler systems.
- As it becomes available, recycled water is proposed to be used for all commonly maintained slopes, parks and public rights-of-way including landscape buffer easements and landscaped areas of commercial and industrial sites.
- Proper irrigation techniques shall be used throughout the village to maximize efficient water usage.

### 3. Plant Palettes

| | |
|---|---|
| Interior Slope Trees: | Hetermomeles arbutifolia (Toyon) |
| | Rhus lancea (African Sumac) |
| | Tristania conferta (Brisbane Box) |
| Interior Slope Shrubs: | California Sagebrush (Artemesia 'Canyon Grey') |
| | Cistus species (Rockrose) |
| | Rhus integrifolia (Lemonade Berry) |
| | Rhus ovata (Sugarbush) |
| Parking Area Trees: | Olea europea (Olive) |
| | Pistachia chinensis (Pistache) |
| | Podocarpus gracilior (Fern Pine) |

Note: This plant palette is subject to Fire Department approval.




LEGEND

- OPEN SPACE CHARACTER TRANSITION / BRUSH MANAGEMENT. OAK, TOYON, DROUGHT TOLERANT MATERIAL (MANUFACTURED SLOPES)
- INTERIOR SLOPES, PREDOMINANTLY EUCALYPTUS
- BUFFER ZONES, DENSE PLANTINGS to SCREEN VIEWS, EUCALYPTUS / PINE SPECIES
- BUSINESS PARK STREET TREES
- ENTRY FEATURE
- ARTERIAL STREETSCAPE - CALIFORNIA PEPPERS
- FLOATING CPF SITE

Exhibit 22

Landscape Zone Plan

## D. MAINTENANCE

### 1. Site

Maintenance of the common area of the business park will be the responsibility of the Master Developer until that responsibility is transferred to a CFD, business association or similar entity. Individual project developers are responsible for maintaining their development sites in a clean, debris and weed free condition with all equipment and materials confined and screened. Project site elements such as monument signs, walls, fences and lighting must be maintained in a functional and attractive condition.

### 2. Buildings

Individual project developers must maintain buildings and other improvements in good condition, adequately cleaned and painted or otherwise finished to present a sightly and well-kept appearance.

### 3. Landscape

Landscape maintenance requires keeping the landscape in a healthy and attractive appearance. This includes adequate irrigation, fertilization, pruning, replacement of dead or marginal plant material and removal of plant debris and trash. The irrigation system must be maintained to function efficiently.

# *Affordable Housing Program*

Adopted May 23, 2006
By Resolution No. 2006-155

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# EXHIBIT LIST

# I. INTRODUCTION

## A. PURPOSE AND CONTENT

The City of Chula Vista requires that a specific Affordable Housing Program (AHP) and agreement, consistent with the Housing Element of the General Plan, be prepared and approved concurrent with the SPA Plan. This Affordable Housing Program is intended to identify the type and location of affordable housing units to be provided, potential subsidies or incentive programs, income restrictions and methods to verify compliance. The program may be implemented through various mechanisms including development agreements, tentative map conditions, and specific housing project agreements that may include additional terms and conditions, consistent with this program.

## B. NEEDS ASSESSMENT

According to SANDAG's Preliminary 2020 Cities/Counties Forecast, Chula Vista is expected to gain 46,000 new residents and 13,801 new households. The characteristics of the City's population, housing, and employment that affect its housing goals, policies and programs include:

- Chula Vista Residents have household income and age characteristics that nearly match the regional median.
- The population has more diversity in race/ethnicity than the region, in that 44 percent of the population is white (non-Hispanic) and 42 percent is Hispanic (all races). This compares to 63 percent and 23 percent, respectively, for the region as a whole.
- Household size is slightly larger than the region, at 3.0 persons per household compared to 2.83 per household for the region.
- A large supply of vacant developable land is planned for communities with a wide variety of densities and land use types.
- The well-established neighborhoods and master planned neighborhoods create different opportunities and require a different set of policies and programs to address housing needs.
- The City's diverse employment base will grow by more than 47 percent between 1995 and 2005, with the majority of growth in the retail, service and governmental sectors.
- A high rate of new home construction is anticipated due to the many approved master planned communities in the City.
- Reinvestment in the well-established neighborhoods of Chula Vista continues to be needed.
- Approximately 13,000 units will be 50 years or older by 2004.

- A home ownership rate of 53 percent is nearly the same as the region's rate of 54 percent.

- The very low rental vacancy rate of 1.1 percent indicates likely increased housing costs and greater likelihood of over-crowding.

- The median housing cost (resale) of $177,000 is $18,500 less than the region's median cost of $195,500.

- Average rents are 10 percent to 30 percent lower than the region wide average rents.

The City has two sets of numerical housing goals established by SANDAG, which are also addressed in the City's draft General Plan Housing Element update; the City's share of the region's future housing needs (regional share goals) and the affordable housing goal for self-certification. The total regional share goal is 10,401 new housing units of which 1,889 are very low-income units and 1,535 are low income. The estimated affordable housing goal for self-certification in 2004 is 1,029 housing opportunities for low-income households.

# II. VILLAGE OF MONTECITO AFFORDABLE HOUSING OBLIGATION, LOCATION, PHASING, DESIGN AND UNIT MIX

## A. OBLIGATION

The City of Chula Vista Housing Element and the Otay Ranch GDP provide that ten percent of the total units will be affordable to low and moderate income households. Of the ten percent, five percent must be affordable to low income households and five percent must be affordable to moderate income households. The estimated Village of Montecito (Montecito) affordable housing unit obligation is based on the Montecito SPA entitlement authorization of 2,786 units within the Village. The affordable units required for Montecito are 139 low income and 139 moderate-income affordable units.

## B. TYPES OF AFFORDABLE HOUSING

The housing policies established in the City of Chula Vista Housing Element advocate a broad variety and diversity of housing types. The affordable housing obligations of Montecito will be met through a combination of housing types including rental and "for-sale" housing. In general, low-income housing needs will be satisfied through the provision of rental units. Housing opportunities to meet the needs of moderate income households will be provided through a combination of market-rate rental units as well as "for-sale" housing in medium-high to higher density developments.

## C. LOCATION

The location of affordable housing developments shall take into consideration proximity to and availability of the following:

- Existing or proposed public transit facilities or transportation routes;
- Existing or proposed community facilities and services, such as shopping, medical, child care, recreation areas and schools; and
- Existing or future employment opportunities.

Affordable housing sites within Montecito are located within or adjacent to the Village Core, in close proximity to parks, schools, public transportation, retail commercial and community purpose facilities. "For-sale" affordable housing for moderate-income households may be provided within multi-family development sites.

Affordable housing to accommodate low-income households may be provided within rental housing developments. Depending upon the availability of adequate subsidies, incentives or other financing assistance, a limited number of "for-sale" multi-family housing units affordable to low income households may be available as well.

Identification of potential target sites in this Affordable Housing Program describes one way in which the Montecito affordable housing obligation might be met, and is not meant to require that affordable units be constructed on any specific sites nor to preclude other alternatives. Such alternatives might include, by way of example, the aggregation of rental housing affordable to low-income households within the Mixed-use site, or as a separate component of another development site. A final determination as to the location and type of the affordable housing sites will occur with subsequent entitlements, approvals and agreements.

Although this Affordable Housing Plan contemplates that the low and moderate-income housing obligations will be met within Montecito, it is not intended to preclude consideration of other sites on a case-by-case basis. Evaluation of alternate locations should include an analysis of the specific benefit to be gained from development of such replacement site, including such factors as an increase in the number of affordable units, deeper affordability levels, or the earlier satisfaction of the affordable housing requirement. In addition, it is acknowledged and agreed that Otay Project LP, the current owner of the majority of Montecito, may use in Montecito any excess affordable housing credits still available from its affordable housing project located in neighborhood R-47 of Village One and/or other projects within Otay Ranch.

## D. PHASING

Development of Montecito will be completed in multiple phases to ensure construction of necessary infrastructure and amenities for each phase as the project progresses. The Phasing Plan is non-sequential. This recognizes that sequential phasing is frequently inaccurate due to unforeseen market changes or regulatory constraints. Therefore, the Village of Montecito and Otay Ranch Business Park SPA Plan and Public Facilities Finance Plan (PFFP) permits non-sequential phasing by imposing specific facilities requirements for each phase to ensure that Montecito is adequately served and City threshold standards are met.

Detailed schedules and building permit stipulations for the construction of affordable units in relation to other market rate units will be established through the initial Affordable Housing Agreement. The Affordable Housing Agreement must be in place prior to the approval of the first Final Subdivision Map.

The Developer shall diligently pursue completion of the construction of the low and moderate income housing units as per the implementation schedule established by the initial Affordable Housing Agreement.

## E. DESIGN

Affordable housing shall be compatible with the design and use of the market rate units, in terms of appearance, materials, and finish quality. The developer

shall have the option of reducing the interior amenities, levels and square footage of the affordable units.

## F. UNIT MIX BY BEDROOM COUNT

The affordable units shall have an overall unit mix by bedroom count which reflects the appropriate community need and shall be comparable to the unit mix by bedroom count of the market rate units in the residential development. Given that 14 percent of the households in Chula Vista (according to the 1990 Census) are large families of five persons or more and a desire on the part of the City to provide housing opportunities for these families throughout the City, a minimum of fifteen percent (15%) of the affordable units shall have three or more bedrooms. Affordable housing to be sold and occupied by income eligible households (for sale units) shall also provide a minimum of two bedrooms.

Should the developer satisfy the affordable housing obligation through the provision of housing for senior citizens as defined by Section 51.3 of the California Civil Code, the developer does not need to provide three bedroom units. However, the developer may only satisfy such obligation through the provision of housing for senior citizens if the City considers such housing to be a high priority need and provides advantages as to location, diversity of housing types, and/or affordability levels.

# III. AFFORDABLE HOUSING RESTRICTIONS

## A. INCOME ELIGIBILITY

To determine the eligibility of a household for the low and/or moderate income housing unit, the household purchasing or renting the affordable unit must qualify as a lower income/moderate income household, as established by and amended from time to time pursuant to Section 3 of the United States Housing Act of 1937, as published by the U.S. Department of Housing and Urban Development (HUD), and as also provided in California Health and Safety Code Sections 50079.5 and 50105.

## B. AFFORDABLE MONTHLY RENTS

For rental housing, compliance with the affordable housing requirements is determined by verifying that the total rent cost paid by the tenant is considered affordable as defined below. To determine affordable rent costs, monthly "Affordable Rent" includes all actual or projected monthly payments for the following:[1]

- Use and occupancy of a housing unit and the associated land and facilities;
- Any separately charged fees and service charges assessed by the lessor which are required by all tenants but is not to include security deposits;
- A reasonable allowance for utilities (including garbage collection, sewer, water, electricity, gas and other heating, cooking, and refrigeration fuels but not to include telephone service, cable TV, or high speed modem) as defined by the Federal Regulations for the Tenant Based Rental Assistance Program; and,
- Possessory interest taxes or other fees and charges assessed for use of the associated land and facilities by a public or private entity other than the lessor.

Affordable monthly rent is not to exceed following calculations:

- **Very Low Income:**
  50 percent (50%) of the Area Median Income (AMI) for San Diego County, adjusted for household size appropriate for the unit, multiplied by 30 percent (30%) and divided by 12.

[1] 25 California Code of Regulations Section 6918

- **Low Income:**
  80 percent (80%) of the Area Median Income (AMI) for San Diego County, adjusted for household size appropriate for the unit, multiplied by 30 percent (30%) and divided by 12.
- **Moderate Income:**
  120 percent (120%) of the area median income (AMI) for San Diego County, adjusted for household size appropriate for the unit, multiplied by not more than 35 percent (35%) and divided by 12.

Should subsidized financing and other incentives from a public agency be proposed and obtained, the monthly affordable rent shall be dictated by such program or granting Agency. If no affordable rent is specified, affordable monthly rents shall be established in accordance with Section 50053 of the California Health and Safety Code.

## C. AFFORDABLE HOUSING COSTS FOR OWNER OCCUPIED HOUSING

For ownership housing (for sale units), compliance with the affordable housing requirements is determined by verifying that the sales price paid by the buyer equates to a total housing costs that is considered affordable as defined below.

To determine affordable housing costs, monthly "Housing Payments" includes all actual or projected monthly payments for the following:

- Principal and interest on a mortgage loan, including rehabilitation loans, at the time of initial purchase by the homebuyer;
- Allowances for property and mortgage loan insurance fees;
- Property taxes and assessments;
- A reasonable allowance for utilities (including garbage collection, sewer, water, electricity, gas and other fuels but not to include telephone service, cable TV or high speed modem) as defined by the Federal Regulations for the Tenant Based Rental Assistance Program;
- Homeowners association fees; and
- Space rent, if the housing unit is on rented land.

Affordable monthly housing payments are not to exceed the following calculations:

- **Very Low Income:**
  50 percent (50%) of the Area Median Income (AMI) for San Diego County, adjusted for household size appropriate for the unit, multiplied by 30 percent (30%) and divided by 12.
- **Low Income:**
  80 percent (80%) of the Area Median Income (AMI) for San Diego County, adjusted for household size appropriate for the unit, multiplied by 30 percent (30%) and divided by 12.
- **Moderate Income:**
  120 percent (120%) of the Area Median Income (AMI) for San Diego County, adjusted for household size appropriate for the unit, multiplied by not more than 35 percent (35%) and divided by 12.

Should subsidized financing and other incentives from a public agency be proposed and obtained, the affordable monthly housing payment shall be dictated by such program or granting Agency. If no affordable monthly housing payment is specified, the affordable monthly housing payment shall be established in accordance with Section 50052.5 of the California Health and Safety Code.

## D. UNDERWRITING REQUIREMENTS

To ensure the preservation of affordability of proposed low and moderate-income housing and financial viability of program participants, the City shall encourage the following policies:

- Fixed rate mortgages only. No adjustable rate mortgages;
- Affordable monthly housing payments no more than 33 percent of household income ("Front End Ratio"). Total debt payments no more than 45 percent of household income ("Back End Ratio").
- No "teaser" rates; and,
- No non-occupant co-borrowers.

## E. RESALE PROVISIONS OF OWNER OCCUPIED HOUSING

In order to ensure the continued affordability of the units, resale of the units must be restricted for the required term of thirty (30) years. After initial sale of the affordable units to a low-income household, all subsequent buyers of such units must also be income eligible and the unity must be sold at an affordable price. A developer may opt to have no income or sales price restriction for subsequent buyers, provided however that restrictions to the satisfaction of the City are in place that would result in the recapture by the City or its designee

of a financial interest in the units equal to the amount of subsidy necessary to make the unit affordable to a low income household and a proportionate share of any equity. Funds recaptured by the City shall be used to provide assistance to other identified affordable housing production or contributions to a special needs housing project or program. To the extent possible, projects using for-sale units to satisfy the obligations of developers under the City's Affordable Housing Program shall be designed to be compatible with conventional mortgage financing programs including secondary market requirements.

## F. TERM OF AFFORDABILITY RESTRICTIONS

Should subsidized financing or other incentives from a public agency be proposed and obtained, the length of time income and rent restrictions are to be maintained for an affordable rental project shall be determined by such program or granting Agency. If more than one funding source is utilized, the term of the affordability restrictions shall be the longest required by any of the funding sources. If no term of the affordability restrictions is specified, it shall be fifty-five (55) years from issuance of the Certificate of Occupancy for the first structure providing income and rent restricted units. In the event that no subsidized financing or other incentives from a public agency is obtained, affordability restrictions shall remain in effect for twenty (20) years from the date of issuance of the Certificate of Occupancy for the first structure in the project. The term of affordability and resale restrictions for affordable for-sale units are more appropriately described above in "Resale Provisions of Owner Occupied Housing."

## IV. SUBSIDIES, INCENTIVES AND FINANCING MECHANISMS

Appendix "A" attached to this Affordable Housing Plan identifies some of the potential subsidies, incentives, and financing mechanisms that may be used to satisfy the Montecito affordable housing obligation. The list contained in Appendix "A" is not intended to limit the use of other subsidies, incentives and financing mechanisms which are available now or may become available in the future. The obligation to provide affordable housing shall not be dependent upon the availability of such subsidies, incentives or financing mechanisms.

The City agrees to use its reasonable best efforts to assist the Developer in pursuing the benefit of certain financing mechanisms, subsidies and other incentives to facilitate provision of affordable housing for Montecito, including those which require approvals from, or allocations by other agencies, to the extent that such resources and programs for this purpose are available. These mechanisms include, but are not limited to, local, state and federal subsidies and City density bonuses, planning, and design and development techniques and standards, and City fee waivers or deferrals which reduce the cost of providing affordable housing (collectively, the "Cost Reducing Mechanisms"). The parties acknowledge that the City is not hereby committing and cannot guarantee the availability of any Cost Reducing Mechanisms to the Developer for Montecito. The City reserves the right to approve, approve with conditions or disapprove, in its sole discretion, any Developer request for subsidized financing sponsored by the City.

### A. DENSITY BONUS

Projects that meet the applicable requirements of State law (Government Code Section 65915) as a result of affordable housing units, are entitled to a density bonus or other incentives in accordance with the provisions of such law.

## V. COMPLIANCE REPORTING

The Compliance reports described below shall be submitted to the City of Chula Vista Community Development Department. The requirements imposed by providers of subsidized financing or other Cost Reducing mechanisms may replace the terms described below at the sole discretion of the City.

### A. RENTAL UNITS' COMPLIANCE PACKET AND AUDIT

Should a Developer seek approval by the City to credit a tenant toward its low and/or moderate income housing obligation, the Developer must give the City, at a minimum, a report verifying compliance with the terms of this document and/or the subsidizing financing program consisting of the following:

- Supplemental Rental Application - Exhibit 1
- Semi-Annual Report – Exhibit 2A and 2B
- Authorization to Release Information
- Acknowledgement that the information is for the City's Reporting and Administration use only.

The Developer shall not be required to perform any extraordinary investigation or verification regarding such information other than the Developer's usual and customary means of income verification. The methods of income verification may vary based upon the nature of the income reported by the tenant, and may include employment verification, copies of recent paycheck stubs, evidence of social security or other government payments, or copies of tax returns. The Developer shall retain the Supplemental Rental Application and any supporting documents for a period of at least three (3) years after the applicant ceases to occupy a low and/or moderate income housing unit.

A household occupying a designated low and/or moderate income unit whose annual income increases subsequent to occupying said unit (referred to as "over income household") and thus exceeds the 80% of area median income for low income households or 120% of area median income for moderate income households, need not vacate the apartment. However, at the Developer's discretion, this over income household's monthly rent (including utilities) may be increased to the market rate. Regardless of a rent increase, the Developer can no longer credit this over income household towards its 5% low income requirement and is obligated to replace this unit by renting the next comparable unit to a low income household as per the paragraph below. Thus, the Developer shall provide income information biannually and acknowledge that should its income increase, the household may be subject to a higher rent. Adjusted monthly incomes can be calculated using rules according to the HUD Handbook 4350/3 Occupancy Requirements for HUD Subsidized Multifamily Housing.

The location of the designated units may change over time (to be referred to as "floating units") as long as the total number of affordable units remains constant and that substituted units are comparable in terms of size, features, and the number of bedrooms, as determined by the Director of the Community Development Department. If the over income household does not vacate the unit, the Developer must assure that when the next comparable apartment becomes vacant, the newly available unit must be rented to a low income household, as a floating unit, to replace the previously designated unit no longer housing a low and/or moderate income household. If the over income household chooses to leave, the vacated unit retains its low income unit designation. If a residential apartment complex is designated as 100% low and/or moderate income, the over income household will not be required to vacate, if it pays the increased rent, and the unit will not be replaced with a "floating unit." When the over income household vacates the unit, the unit retains its low income unit designation.

If the City determines that an outside audit is necessary to verify the accuracy of the submitted rent roll, then on a basis no more frequently than once a year, it may require such an audit at the expense of the Developer. In such an event, within ten (10) days after delivery of the City's written request for such outside audit, the Developer shall deliver to the City the name of three (3) certified public accountants doing business in the Metropolitan San Diego area. The City will promptly deliver to the Developer notice of approval by the City of one or more of said names.

The audit shall be completed by an approved certified public accountant, at the Developer's sole cost and expense, within sixty (60) days after the delivery to the Developer of the City's approval. The certified public accountant shall promptly deliver a copy of the written audit to the City. Such audit shall be an audit of the Developer's records, including the information supplied to the Developer by the low income tenants. The auditor shall not be required to verify the accuracy of the information provided by the low-income tenants.

## B. HOME OWNERSHIP UNITS' COMPLIANCE PACKET

Should the Developer seek approval by the City to credit a home purchase toward its low and/or moderate income housing obligation, the Developer must give the City, at a minimum, a compliance packet including the following:

- Copy of Settlement Sheet
- Final 1003
- Final Uniform Underwriting Transmittal Summary
- Good Faith Estimate
- Authorization to Release Information by Purchaser
- Annual Certification of Homebuyer to include a copy of tax information and copy of phone or other utility bill
- Acknowledgement that the information is for the City's Reporting and Administration use only

Verification of low and/or moderate-income buyer is to be completed by the Developer on behalf of the City. The Developer shall not be required to perform any extraordinary investigation or verification regarding such information other than the Developer's usual and customary means of income identification. The methods used to verify income will vary depending upon the nature of sources of income reported by the buyer, but may include employment verification, review of recent paycheck stubs, government or social security payments, or a review of recent tax returns.

The Developer may contact the City's Community Development Housing Division's Housing Coordinator to confirm the City's acceptance of the applicant as credit toward the Developer's low and/or moderate income housing unit obligation. The Developer may contact the City prior to the sale of the unit for consultation purposes if desired; however, approval will be given in writing only after the required documents are reviewed and accepted by the City.

## VI. AFFIRMATIVE MARKETING PLAN

The Developer shall provide a marketing plan acceptable to the City, in the City's reasonable discretion, for proactively marketing the low and moderate income housing units to low and moderate income tenants and purchasers. Developer shall use good faith and reasonable best efforts to market the low and moderate income housing units to low and moderate income tenants and purchasers according to the affirmative marketing plan. (See Exhibit 4, "City Requirements for Affirmative Action Plan.")

The City will use good faith and reasonable best efforts to assist the Developer in marketing low and moderate income housing units to low and moderate income tenants and purchasers obtaining the services of a third-party organization in connection with such marketing efforts, processing the applications of prospective tenants and purchasers of low and moderate income housing units, and complying with the reporting requirements as required herein.

## VII. IMPLEMENTING AGREEMENTS AND CONDITIONS

This AHP may be implemented through various mechanisms including development agreements, tentative map conditions, and specific housing project agreements that may impose additional terms and conditions consistent herewith.

## VIII. DEFINITIONS

*Affirmative Marketing Plan:*

An outline that details actions the Developer will take to provide information and otherwise attract eligible persons in the housing market area to the available housing without regard to race, sex, sexual orientation, marital status, familiar status, color, religion, national origin, ancestry, handicap, age, or any other category which may be defined by the law now or in the future.

*Low Income Household:*

A household of persons who claim primary residency at the same unit with combined incomes that are greater than 50%, but not more than 80% of the Area Median Income for the San Diego area based on household size as determined annually by the U.S. Department of Housing and Urban Development (HUD). Household size is calculated by the number of persons residing at the same unit as their primary residency.

*Moderate Income Household:*

A household of persons who claim primary residency at the same unit with combined incomes between 80% to 120% of the Area Median Income for the San Diego area based on household size as determined annually by the U.S. Department of Housing and Urban Development (HUD). Household size is calculated by the number of persons residing at the same unit as their primary residency.

*San Diego Area Median Income:*

The San Diego County area median income level as determined from time to time by HUD, based on household size.

*Subsidized Financing:*

Any financing provided by any public agency specifically for the development and construction of low or moderate income housing units, including but not limited to the following:

- Low Income Housing Tax Credits (LIHTC) – statewide competition;
- Housing Bonds – State;
- Housing Bonds – City of Chula Vista;
- Redevelopment Low and Moderate-income Housing Fund – Redevelopment Agency;
- HOME – City of Chula Vista and County of San Diego;
- Community Development Block Grants – City of Chula Vista; and,
- Other Public Financing – State and Federal.

## EXHIBIT 1A
## Supplemental Rental Application

The rental unit for which you are applying has received governmental assistance under programs to encourage more affordable housing. As a result, the unit carries a rent level restriction and is restricted to occupancy by low and moderate income households.

The information required on this form is necessary to determine your income eligibility to occupy the unit. You must report all household income. Information provided will be confidential and not subject to public disclosure pursuant to State Government Code Section 6254(n).

Rental Unit Address_____

Applicant Name_____

Other Household Members_____

Total Current Annual Household Income from all Sources Including Asset:

TOTAL $_____

Detail:

Household Member_____Income_____Source_____

Total Gross Annual Household Income shown on most recent Federal Tax Return from Previous Calendar Year (Attach copies of most recent Federal Tax returns from previous calendar year for all household members receiving income. Include other verification of income not appearing on tax forms).

$_____

Monthly Rental Rate $_____

Number of Bedrooms_____

## EXHIBIT 1B
## Applicant's Statement

I certify under penalty of perjury that the following information is true and correct to the best of my knowledge. I understand that any misrepresentation of the information contained herein may be cause for eviction.

Signature_____

Date_____

**Owner's Statement**

Based on the foregoing information, I certify under penalty of perjury that the applicant is eligible to occupy this restricted low and moderate income housing unit. Eligibility is based on finding that the applicant's household's current annual income is $_____ and does not exceed current maximum household income of $_____ allowed under the terms of a Development Agreement with the City of Chula Vista regarding this residential rental development.

Name:_____

Title:_____

Signature:_____

Date:_____

# EXHIBIT 2A
# Semi-annual Report

## Owner's Certification

I am the owner or owner's representative for an affordable housing development in the City of Chula Vista which is bound by a Housing Agreement with the City.

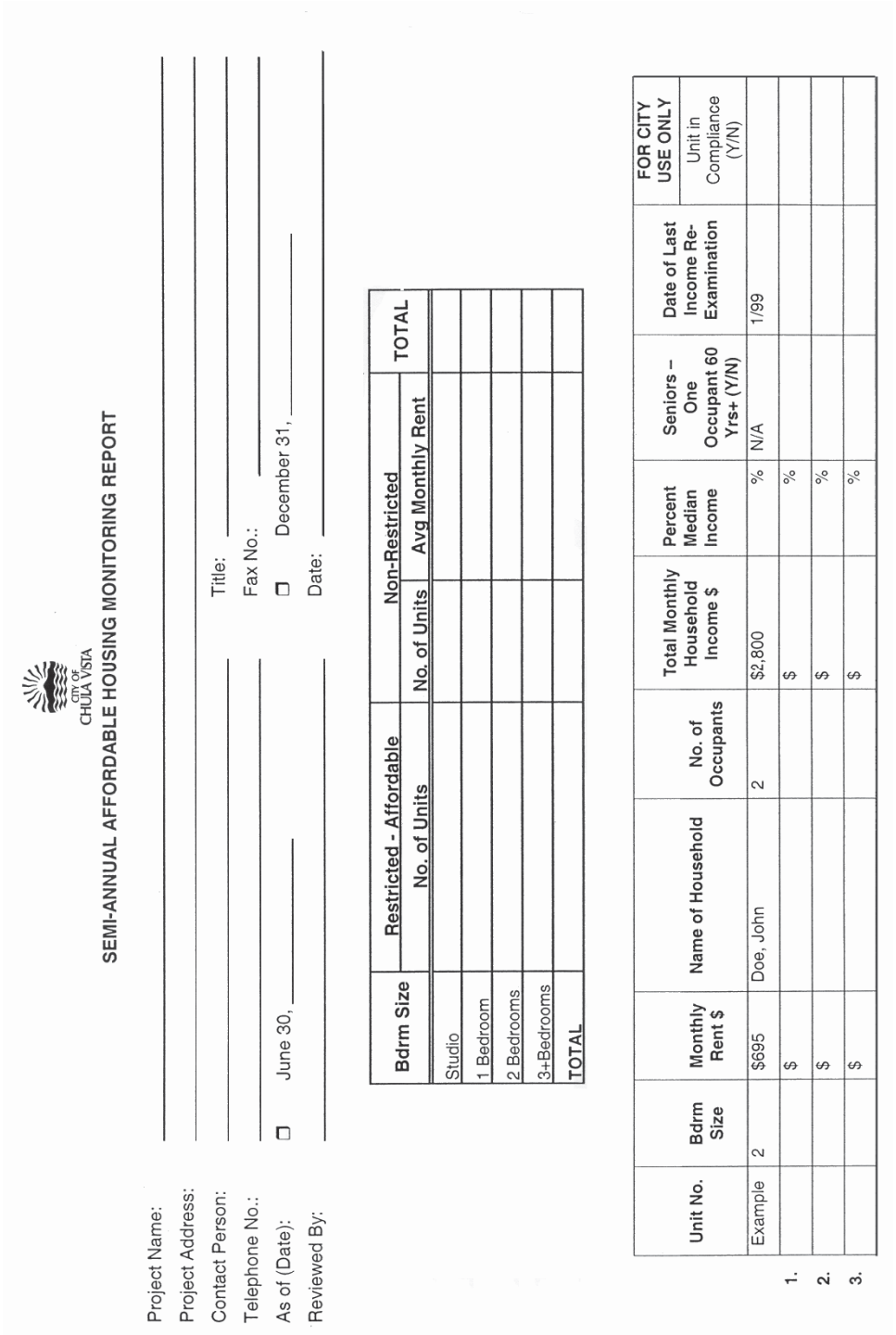
I certify under penalty of perjury that the attached rent roll for affordable units at my project is true and correct to the best of my knowledge and complies with the terms and conditions stipulated in the Affordable Housing Agreement, or any agreements that implements the same, with the City of Chula Vista.

Name:_____

Title:_____

Signature: _____Date:_____

# EXHIBIT 2B
# Semi-Annual Affordable Housing Monitoring Report



CITY OF CHULA VISTA

**SEMI-ANNUAL AFFORDABLE HOUSING MONITORING REPORT**

Project Name: _____

Project Address: _____

Contact Person: _____ Title: _____

Telephone No.: _____ Fax No.: _____

As of (Date): ☐ June 30, _____ ☐ December 31, _____

Reviewed By: _____ Date: _____

| Bdrm Size | Restricted - Affordable | Non-Restricted | | TOTAL |
|---|---|---|---|---|
| | No. of Units | No. of Units | Avg Monthly Rent | |
| Studio | | | | |
| 1 Bedroom | | | | |
| 2 Bedrooms | | | | |
| 3+Bedrooms | | | | |
| TOTAL | | | | |

| | Unit No. | Bdrm Size | Monthly Rent $ | Name of Household | No. of Occupants | Total Monthly Household Income $ | Percent Median Income | Seniors – One Occupant 60 Yrs+ (Y/N) | Date of Last Income Re-Examination | FOR CITY USE ONLY Unit in Compliance (Y/N) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Example | 2 | $695 | Doe, John | 2 | $2,800 | % | N/A | 1/99 | |
| 1. | | | $ | | | $ | % | | | |
| 2. | | | $ | | | $ | % | | | |
| 3. | | | $ | | | $ | % | | | |

Page 1 of 2

# EXHIBIT 2B
# Semi-Annual Affordable Housing Monitoring Report

CITY OF CHULA VISTA

**SEMI-ANNUAL AFFORDABLE HOUSING MONITORING REPORT**

Project Name: _____

As of (Date): ☐ June 30, _____ ☐ December 31, _____

| | Unit No. | Bdrm Size | Monthly Rent $ | Name of Household | No. of Occupants | Total Monthly Household Income $ | Percent Median Income | Seniors – One Occupant 60 Yrs+ (Y/N) | Date of Last Income Re-Examination | FOR CITY USE ONLY: Unit in Compliance (Y/N) |
|---|---|---|---|---|---|---|---|---|---|---|
| 4. | | | $ | | | $ | % | | | |
| 5. | | | $ | | | $ | % | | | |
| 6. | | | $ | | | $ | % | | | |
| 7. | | | $ | | | $ | % | | | |
| 8. | | | $ | | | $ | % | | | |
| 9. | | | $ | | | $ | % | | | |
| 10. | | | $ | | | $ | % | | | |
| 11. | | | $ | | | $ | % | | | |
| 12. | | | $ | | | $ | % | | | |
| 13. | | | $ | | | $ | % | | | |
| 14. | | | $ | | | $ | % | | | |
| 15. | | | $ | | | $ | % | | | |
| 16. | | | $ | | | $ | % | | | |
| 17. | | | $ | | | $ | % | | | |
| 18. | | | $ | | | $ | % | | | |
| 19. | | | $ | | | $ | % | | | |
| 20. | | | $ | | | $ | % | | | |

Deadline for Submittal: January 15th and July 15th of each year.

*Revised: January 2001*

Word: Monitor Rpt -Aff Hsg

## EXHIBIT 3
## Homebuyer's Qualifying Form

| |
|---|
| Buyer's Name |
| Current Address |
| Tract |
| Lot # |
| Lot Address |
| Purchase Price * |
| Monthly PITI Payment |
| % of Income |
| # Bedrooms |
| Household Size |
| Year of Purchase |
| Median San Diego |
| Household Income |
| % of Median |
| Current Income |
| Signature Authorizing |
| Release to City |
| Sales Representative |
| Submitted to City on |

Note: This information is for the City's Reporting and Administrative Use Only.

## EXHIBIT 4
## City Requirements for Affirmative Marketing Plan

City of Chula Vista Equal Housing Opportunity Requirements For the Low/Moderate Income Housing Affirmative Marketing Plan

Every Developer complying with the City of Chula Vista's Housing Element's "Affordable Housing Plan" shall submit to the City and Affirmative Marketing Plan for City Review and Approval which details actions the Developer will take to provide information and otherwise attract eligible persons in the housing market area to the available housing without regard to race, sex, sexual orientation, marital status, familiar status, color, religion, national origin, ancestry, handicap, age, or any other category which may be defined by the law now or in the future.

I. The City of Chula Vista Affirmative Marketing Requirements are as follows. Please note, however, the Plan is not limited to the Requirements.

(i) Detail methods for informing the public, buyers and potential tenants about Federal fair housing laws and the City of Chula Vista's affirmative marketing policy;

(ii) Publicize to minority persons the availability of housing opportunities through the type of media customarily utilized by the applicant, including minority outlets which are available in the housing market area;

(iii) Identify by language and by number any significant number of persons in a community within the housing market area who have limited fluency in the English language;

(iv) Where there is a significant number of persons in a community within the housing market area who have limited fluency in the English language, the Plan shall:

*(a) Identify the media most likely to reach such persons.*

*(b) Advertise for the housing development in the native language of such persons, in addition to the English language, and*

*(c) Describe the provisions which the housing sponsor will make for handling inquiries by and negotiations with such persons for the rental or sale of units in the development.*

*(d) Detail procedures to be used by the Developer and/or property manager to inform and solicit applications from persons in the housing market area who are not likely to apply for the housing without special outreach (e.g., use of community organizations, places of worship, employment centers, fair housing groups, or housing counseling agencies).*

II. Records must be kept describing actions taken by the Developer and/or property managers to affirmatively market units and records to assess the results of these actions:

(i) The records shall include a copy or transcript of the advertisement copy, the identity of the media in which it was disseminated, and the date(s) of each appearance. The housing sponsor shall also keep a record of the dates and places of any meetings or communications between the housing sponsor and any individual or group referred to the housing sponsor by the agency or organizations representing any of the groups within the community acting on behalf of any classification of minority persons described above. Such records shall be retained for a period of five years;

(ii) A description of how the Developer and/or property managers will annually assess the success of affirmative marketing actions and what corrective actions will be taken where affirmative marketing requirements are not met; and

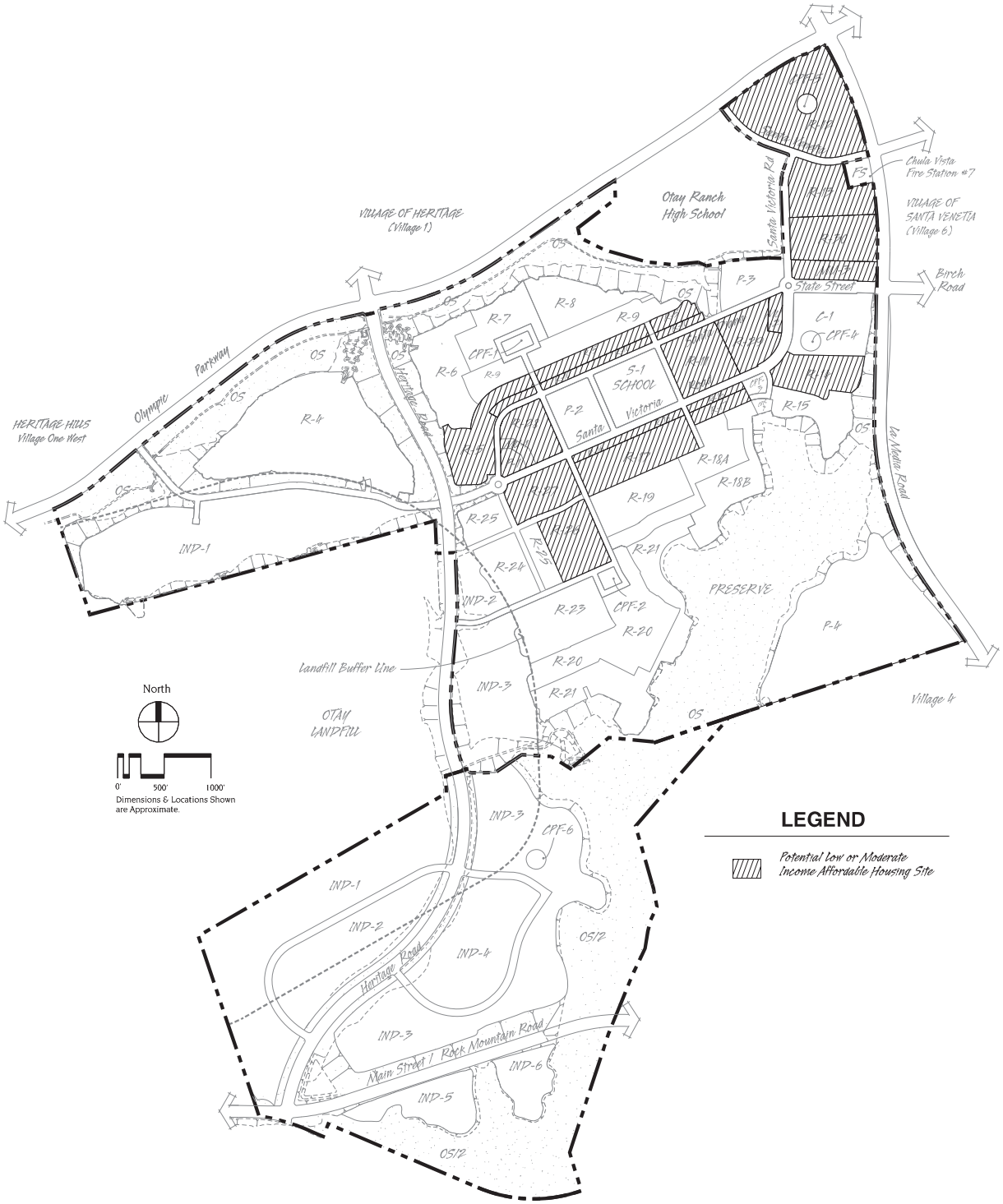
(iii) The Developer/property manager shall furnish all information and reports required hereunder and will permit access to its books, records and accounts by the City of Chula Vista, HUD or its agent, or other authorized Federal and State officials for purposes of investigation to ascertain compliance with the rules, regulations and provisions stated herein.

III. The City of Chula Vista may from time to time review the Plan and the Developer's and property manager's activities pursuant to the Plan and may require amendments to the Plan if it does not fully comply with the requirements of this section.

IV. An affirmative marketing program shall be in effect for the duration of the Qualified Term defined in the Affordable Housing Agreement

V. If a source of funding uses in a low/moderate income housing development, such as federal or state funds, has affirmative marketing requirements more restrictive than the City of Chula Vista's affirmative marketing requirements, then the more restrictive applies.

# EXHIBIT 5
## Affordable Housing Plan



# *Air Quality Improvement Plan*

Adopted May 23, 2006
By Resolution No. 2006-155

## A. INTRODUCTION

The Chula Vista Growth management Ordinance Municipal Code Section 19.09.050B requires that all major development project (50 dwelling units or greater) prepare an Air Quality Improvement Plan (AQIP). This plan must be submitted with the Sectional Planning Area (SPA) Plan for the project.

Per the adopted Chula Vista AQIP Guidelines, two options are available to meet the AQIP requirements. The Developer may choose to participate in the Chula Vista GreenStar Building Efficiency Program or evaluate the project using the Chula Vista $CO_2$ INDEX model including any necessary site plan modifications. The Village Seven SPA Developer has chosen to participate in the Chula Vista Greenstar Building Efficiency Program and has prepared this AQIP consistent with that section.

## B. PROJECT DESCRIPTION

The SPA Plan includes Villages 2, 3 and a portion of Village 4. Proposed development within the Village 2 boundary (see Exhibit 1) includes 2,786 mixed density residential units, a school, commercial, parks and opens space. The residential development proposes 986 single family residential units and 1,800 multi-family units. The Village 3 area proposes 176.5 acres of industrial development and a 10.2 acre community purpose site (see Exhibit 2). Village 4 proposes a 44.2 acre community park site.

## C. AIR QUALITY IMPROVEMENT PLAN PROGRAM

The Developer agrees to exceed the California 2001 title 24, Part 6, Energy Efficiency Standards (CA 2001 Title 24, effective 6/1/01) by 15% in the majority (50% or greater) of residential dwelling units through participation in a building efficiency program such as ComfortWise or CA Energy Star, or develop a custom building efficiency program using construction methods that exceed CA 2001 Title 24 requirements by 15%.

The Developer agrees to construct 50 percent of their residential dwelling units or 493 single family homes and 900 multi-family units, to the Chula Vista GreenStar Building Efficiency Program standard, as described above. In addition, the Developer agrees to construct 50% of non-residential structures to exceed CA 2001 Title 24 requirements by 10%, consistent with the non-residential requirements in the Chula Vista Air Quality Improvement Plan Guidelines.

Because energy conservation technology and programs are constantly changing, the specific program will not be identified until approval of the first Village Two Tentative (or final map if the SPA Plan and Tentative Map are concurrently processed). At that time the Developer will submit a letter to the Director of Planning and Building identifying the specific building efficiency program to be implemented, or the Developer will design a custom building program that exceeds CA 2001 Title 24 requirements consistent with the Chula Vista Air Quality Improvements Plan Guidelines. If a custom building program is proposed, it shall be accompanied by data confirming that it exceeds CA 2001 title 24 consistent with the Chula Vista Air Quality Improvement Plan Guidelines to the satisfaction of the Director of Planning and Building or

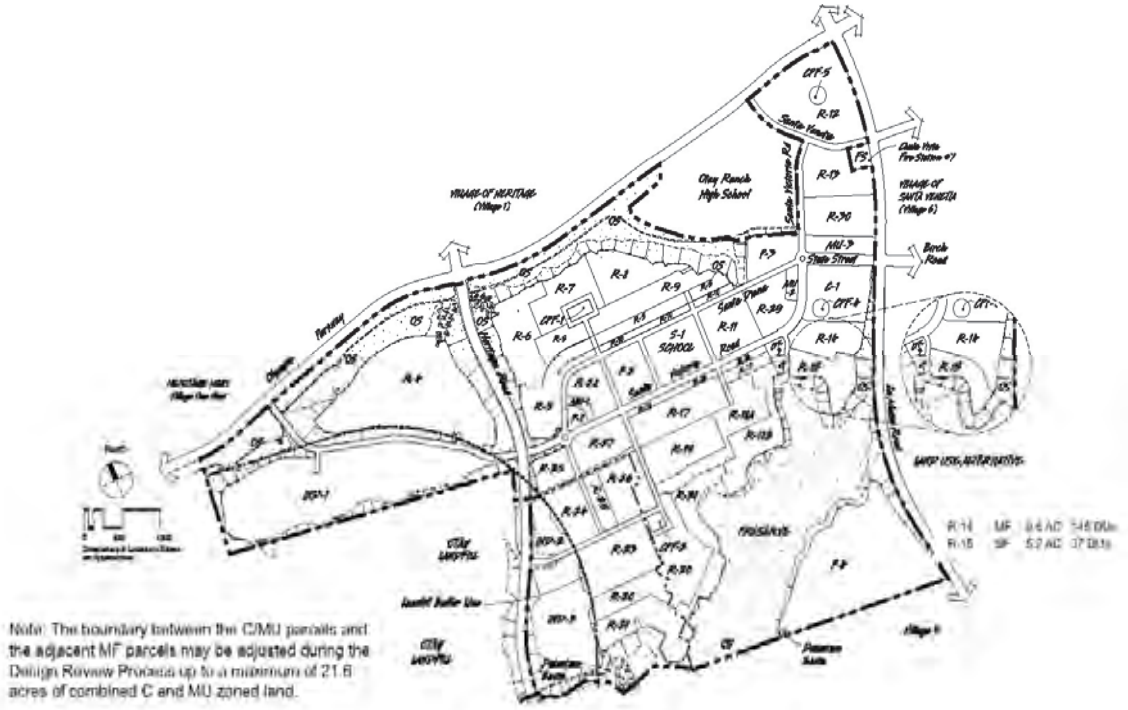
his/her designee. The lot numbers of the single family units participating in the selected building efficiency program and the multi-family and non-residential structures will be identified at the Tentative Map (or final map as indicated above) submittal/approval stage.

In addition to the Greenstar Building commitment described above, the Village 2, 3, and a portion of 4 SPA Plan also includes the following land use and design features which promote efficiency and energy conservation:

*Transit Oriented Development* – Village Two is a transit-oriented village, with a transit stop for the Bus Rapid Transit (BRT) system designated with the Village Two core area. The compact design and integrated street/path circulation system places daily needs within easy walking or biking distance. The regional trail and Village Pathway pedestrian circulation system connects residents to the Village Core and surrounding open space trails, recreational amenities, civic uses and schools.

*Housing Efficiency* – In addition to the transit benefits associated with increased residential densities near transit stops, there are building related energy benefits. Smaller and more compact single-family homes, multi-family homes and mixed use residential/commercial projects use less energy for space heating and cooling that typical single-family detached homes. More than 60% of the homes in Village Two are multi-family homes.

*Street Widths, Pavement and Street Trees* – Reducing street widths can reduce heat build-up and consequently energy demand for air conditioning. In addition to reduced paving widths, the inclusion of street trees along every street within the village will shade the pavement and reduce temperatures. Village Two street widths have been reduced, consistent with the standards in the Otay Ranch General Development Plan. Residential streets have a 32 foot paved section, compared to a 36-40 foot section typical of suburban development patterns.




**LAND USE SUMMARY**

**Village Two**

| Neighborhood | Land Use | Acreage | DUs | Target Density |
|---|---|---|---|---|
| **Single Family** | | | | |
| R-4 | SF | 41.5 | 160 | 3.9 |
| R-6 | SF | 12.6 | 63 | 5.0 |
| R-7 | SF | 9.4 | 44 | 4.7 |
| R-8 | SF | 10.0 | 57 | 5.7 |
| R-9 | SF | 13.6 | 101 | 7.5 |
| R-10 | SF | 7.2 | 46 | 6.3 |
| R-10A | SF | 11.8 | 65 | 5.5 |
| R-10B | SF | 10.1 | 46 | 4.6 |
| R-19 | SF | 10.0 | 69 | 7.0 |
| R-20 | SF | 19.3 | 83 | 4.3 |
| R-21 | SF | 23.3 | 64 | 2.8 |
| R-23 | SF | 13.1 | 77 | 5.9 |
| R-24 | SF | 7.6 | 41 | 5.4 |
| R-25 | SF | 9.9 | 69 | 7.0 |
| | **Subtotal Family** | **193.7** | **896** | **5.0** |
| **Multi-Family** | | | | |
| R-5 | MF | 15.7 | 132 | 8.3 |
| R-10 | MF | 4.5 | 90 | 20.0 |
| R-11 | MF | 9.9 | 144 | 14.5 |
| R-12 | MF | 24.0 | 295 | 12.3 |
| R-13 | MF | 10.3 | 169 | 16.4 |
| R-14 | MF | 7.6 | 137 | 18.0 |
| R-16 | MF | 3.5 | 74 | 21.1 |
| R-17 | MF | 11.5 | 119 | 10.3 |
| R-26 | MF | 5.0 | 78 | 15.6 |
| R-27 | MF | 9.0 | 116 | 12.8 |
| R-28 | MF | 5.9 | 85 | 14.4 |
| R-29 | MF | 8.9 | 152 | 17.1 |
| R-30 | MF | 10.2 | 180 | 17.6 |
| | **Subtotal Multi-Family** | **129.6** | **1,740** | **13.4** |
| **Mixed Use** | | | | |
| MU-1 | MU | 1.7 | 10 | 5.7 |
| MU-2 | MU | 1.4 | 12 | 8.6 |
| MU-3 | MU | 4.3 | 39 | 9.0 |
| | **Subtotal Mixed Use** | **6.8** | **62** | |

| Commercial | Land Use | Acreage | DUs | Target Density |
|---|---|---|---|---|
| C-1 | Comm | 11.9 | | |
| | **Subtotal Commercial** | **11.9** | | |
| **Industrial** | | | | |
| IND-1 | Industrial | 61.5 | | |
| IND-2 | Industrial | 9.7 | | |
| IND-3 | Industrial | 26.7 | | |
| | **Subtotal Industrial** | **97.9** | | |

Note: Industrial parcels may be developed as residential and CPF uses subject to future environmental review and SPA Policies and Requirements, after landfill operations cease at the Otay Landfill.

| | | | | |
|---|---|---|---|---|
| **Park** | | | | |
| P-1 | Town Square Park | 1.4 | | |
| P-2 | Park | 7.1 | | |
| P-3 | Park | 5.9 | | |
| P-4 | Park | 44.2 | | |
| | **Subtotal Parks** | **58.6** | | |
| **CPF*** | | | | |
| CPF-1 | CPF | 1.2 | | |
| CPF-2 | CPF | 0.9 | | |
| CPF-3 | CPF | 1.7 | | |
| CPF-4 | CPF | 1.5 | | |
| CPF-5 | CPF | 0.8 | | |
| | **Subtotal CPF** | **6.1** | | |
| **Other** | | | | |
| S-1 | School | 10.0 | | |
| Open Space | OS | 194.5 | | |
| Preserve | OS | 74.7 | | |
| External Circulation | | 26.2 | | |
| Internal Circulation | | 42.6 | | |
| | **Subtotal Open Space & Other** | **348.3** | | |
| | | **918.0** | **2,766** | |

*An additional 3.0 to 5.0 acre CPF site will be provided within the Village Core Pursuant to a subsequent SPA Amendment

Exhibit 10

Exhibit 1
**Village 2, Portion of 4, Site Utilization Plan**

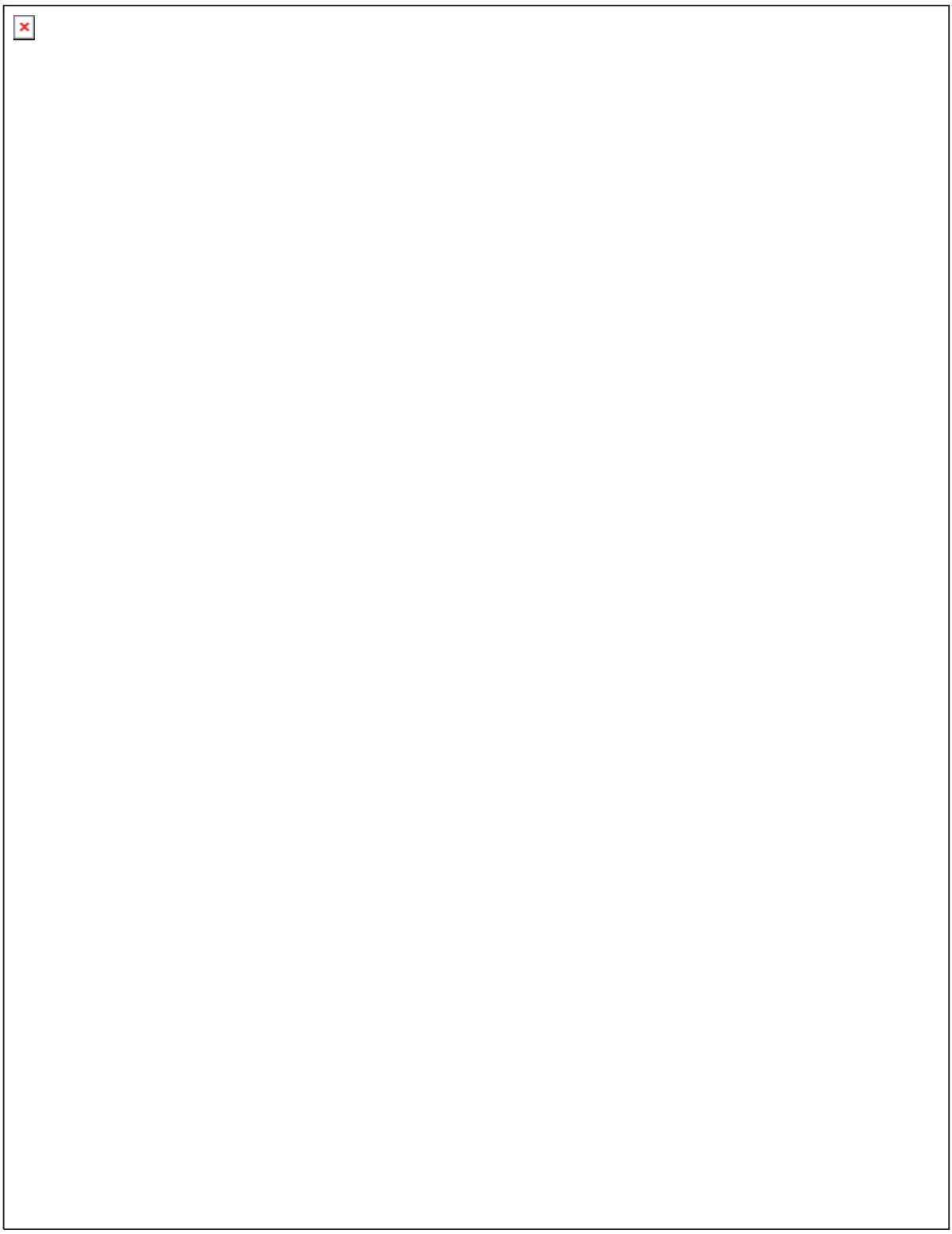


Exhibit 2
**Village 3 Site Utilization Plan**

# OTAY RANCH
# VILLAGES 2, 3, AND A PORTION
# OF 4 SPA
# II.8 WATER CONSERVATION PLAN

**February 2006**

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**Job Number: 605-802**

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## ABBREVIATIONS

| | |
|---|---|
| ac - | acre |
| ac-ft - | acre-foot |
| cfd - | community facilities district |
| cfs - | cubic feet per second |
| gpd - | gallons per day |
| gpf - | gallons per flush |
| gpm - | gallons per minute |
| HOA - | homeowner's association |
| mgd - | million gallons per day |

## USEFUL CONVERSIONS

| | | |
|---|---|---|
| 1 acre-foot | = | 325,829 gallons |
| 1 mgd | = | 1,000,000 gallons/day |
| 1 cfs | = | 448.8 gpm |
| 1 cubic foot | = | 7.48 gallons |
| 1 mgd | = | 694.4 gpm |

## II-8.1 EXECUTIVE SUMMARY

The City of Chula Vista's Growth Management Ordinance requires that all development projects with 50 dwelling units or greater prepare a Water Conservation Plan at the time of the Sectional Planning Area Plan preparation. This plan presents a review of presently available technologies and practices which result in water conservation in primarily residential development. This report presents water conservation measures that will be incorporated into the planning and design of Otay Ranch Villages 2, 3, and a Portion of 4.

Proposed development within Village 2 includes 2,786 mixed density residential dwelling units, a school, commercial, industrial, parks, and open space. The residential development proposes 986 single family residential units and 1,800 multi-family units. Proposed development in Village 3 includes 176.5 acres of industrial, a 10.2 acre CPF site, and associated roads and open space. In addition, a community park is proposed within a portion of Village 4 (Park P-4).

The Otay Water District is the local water agency that will supply potable water and recycled water to Villages 2, 3, and a Portion of 4. The total estimated average potable and recycled water use for the project is 1.38 mgd and 0.42 mgd, respectively.

The State and local government have mandated a number of water conservation measures. The focus of this study is on the implementation of non-mandated water conservation measures. The project will install hot water pipe insulation, pressure reducing valves, and water efficient dishwashers in all single family and multi-family residential units. Additionally, the developer will install evapotranspiration controllers and dual flush toilets in the single family residential units and utilize water efficient irrigation systems and evapotranspiration controllers for the non-residential sites. At buildout of the project, implementation of the above measures would result in an estimated water savings of 101,850 gallons per day for the residential component of the project.

## II-8.2 INTRODUCTION

In recent years, the subject of water conservation has been given increased attention. The growing awareness of the need and value of water conservation has been sparked by local and regional water purveyors concerned about meeting the future water demands of their customers, particularly during drought conditions. Water conservation provides an alternative approach to the problem of finding new water sources to meet the water demand for a proposed community. The intent of water conservation is to manage water demand so that the customers receive adequate service but use less water.

Much has been done to educate consumers about limitations of water supply, the serious implications of a long-term drought and the need for water conservation, but there is a practical limit to the percentage reduction of water use in established communities. This limit is a result of the types of plumbing fixtures installed in existing homes as well as the difficulty in altering consumers' established patterns of water use. Any water conservation effort, voluntary or mandatory, requires the cooperation of the public. Public information should be utilized to inform and convince the consumer that a change in personal water use habits is in everyone's best interest.

In recent years, the private development sector has become more attuned to the concerns of water availability and has recognized the value of addressing water conservation issues throughout planned development projects. By incorporating low water use plumbing fixtures, promoting drought tolerant landscaping, and providing educational materials to homeowners within the development project, private developments can do much to cultivate an interest in water conservation and establish new patterns of water use. These efforts can have significant impacts with regard to reducing the need for securing and importing larger quantities of water for use in San Diego County.

## II-8.3 PURPOSE

The City of Chula Vista's Growth Management Ordinance requires that all major development projects (50 dwelling units or greater) prepare a Water Conservation Plan at the time of Sectional Planning Area Plan preparation. Consistent with the Master Planned Communities Outline, Section II-8 of the Village 2 SPA Plan contains the Water Conservation Plan. The City has adopted guidelines for the preparation and implementation of required water conservation plans.

This report will present water conservation measures which will be incorporated into the planning and design of the project, including an estimate of the anticipated water savings.

Approximately half of the water used by residences in California is used outdoors. For this reason, several options are presented that serve to reduce outdoor water use. The latest water conservation devices will be presented along with an evaluation of their feasibility.

Although not covered in detail, there are several secondary benefits to conserving water that should be kept in mind when reviewing material in this report. These benefits include reduced sewage flows, reduced natural gas use, and reduced electricity use. Using less water in the shower, for example, reduces the amount of water input into the sewer system and reduces the amount of energy required to heat the water.

## II - 8.4 PROJECT DESCRIPTION

Proposed development within the Village 2 boundary includes 2,786 mixed density residential dwelling units, a school, commercial, parks, 87.9 acres of industrial area, and open space. The residential development proposes 986 single family residential units and 1,800 multi-family units. A community park is proposed within a portion of Village 4 (Park P-4). The Village 3 area proposes 176.5 acres of industrial development and a 10.2 acre community purpose site. Figure 1 provides the proposed land use plan for the project and Table 1 provides a land use summary.

## FIGURE 1

## PROPOSED LAND USE PLAN

**TABLE 1**
**OTAY RANCH VILLAGES 2, 3, AND A PORTION OF 4**
**LAND USE PLAN**

| Neighborhood | Land Use | Acres | Dwelling Units |
|---|---|---|---|
| **VILLAGE 2** | | | |
| R-4 | SF | 41.5 | 160 |
| R-5 | MF | 15.7 | 130 |
| R-6 | SF | 12.6 | 63 |
| R-7 | SF | 9.4 | 44 |
| R-8 | SF | 10.0 | 51 |
| R-9 | SF | 13.3 | 101 |
| R-10 | MF | 4.5 | 90 |
| R-11 | MF | 9.9 | 144 |
| R-12 | MF | 24.0 | 295 |
| R-13 | MF | 10.3 | 149 |
| R-14 | MF | 7.6 | 137 |
| R-15 | SF | 7.2 | 45 |
| R-16 | MF | 3.5 | 74 |
| R-17 | MF | 11.5 | 119 |
| R-18A | SF | 11.8 | 66 |
| R-18B | SF | 10.4 | 46 |
| R-19 | SF | 10.8 | 83 |
| R-20 | SF | 19.3 | 83 |
| R-21 | SF | 22.2 | 64 |
| R-23 | SF | 13.1 | 71 |
| R-24 | SF | 7.6 | 41 |
| R-25 | SF | 9.5 | 68 |
| R-26 | MF | 8.8 | 75 |
| R-27 | MF | 8.8 | 110 |

**TABLE 1**
**OTAY RANCH VILLAGES 2, 3, AND A PORTION OF 4**
**LAND USE PLAN**

| Neighborhood | Land Use | Acres | Dwelling Units |
|---|---|---|---|
| **VILLAGE 2** | | | |
| R-28 | MF | 5.9 | 85 |
| R-29 | MF | 8.9 | 152 |
| R-30 | MF | 10.2 | 180 |
| MU-1 | MU (COMMERCIAL/MF) | 1.1 | 10 |
| MU-2 | MU (COMMERCIAL/MF) | 1.4 | 12 |
| MU-3 | MU (COMMERCIAL/MF) | 4.3 | 38 |
| C-1 | Commercial | 11.9 | --- |
| IND-1 | Industrial | 51.5 | --- |
| IND-2 | Industrial | 6.7 | --- |
| IND-3 | Industrial | 29.7 | --- |
| CPF-1 | Community Purpose | 1.2 | --- |
| CPF-2 | Community Purpose | 0.9 | --- |
| CPF-3 | Community Purpose | 1.7 | --- |
| CPF-4 | Community Purpose | 1.5 | --- |
| CPF-5 | Community Purpose | 0.8 | --- |
| P-1 | Park | 1.4 | --- |
| P-2 | Park | 7.1 | --- |
| P-3 | Park | 6.9 | --- |
| S-1 | School | 10.3 | --- |
| OS | Open Space | 239.2 | --- |
| Streets | Circulation | 68.8 | --- |
| **Subtotal Village 2** | | **774.7** | **2,786** |

| | | | |
|---|---|---|---|
| **VILLAGE 3** | | | |
| I-1 | Industrial | 54.5 | --- |
| I-2 | Industrial | 26.4 | --- |
| I-3 | Industrial | 50.1 | --- |
| I-4 | Industrial | 26.4 | --- |
| I-5 | Industrial | 11.3 | --- |
| I-6 | Industrial | 7.8 | --- |
| CPF-6 | Community Purpose Facility | 10.2 | --- |
| OS | Open Space | 146.9 | --- |
| Streets | Circulation | 34.8 | --- |
| **Subtotal Village 3** | | 368.4 | --- |
| **VILLAGE 4** | | | |
| P-4 | Community Park | 44.2 | --- |
| **TOTAL** | | 1,187.3 | 2,786 |

## II-8.5 WATER SERVICE AND SUPPLY

The Otay Water District is the local water agency that will supply potable water and recycled water to Villages 2, 3, and a Portion of 4. The Otay Water District relies solely on the San Diego County Water Authority (SDCWA) for its potable water supply. The SDCWA is the largest of 27 member agencies of the Metropolitan Water District of Southern California (MWD), which is the primary importer of domestic water in Southern California.

## II-8.6 PROJECTED WATER USE

### II-8.6a Potable Water Demand

Water use is affected by, among other things, climate and the type of development. In California, recent trends towards the construction of more multi-unit housing, the general reduction in residential lot size, and a number of local agency water conservation programs in effect are all tending to reduce per capita water consumption.

Potable water demands were projected by taking the total development for each land use and multiplying by water use factors. Table 2 provides the projected potable water demand for Villages 2, 3, and a portion of 4. The total estimated potable water use is 1.35 mgd. Potable water use factors were taken from the July 2002 Otay Water District Water Resources Master Plan.

**TABLE 2**
**PROJECTED POTABLE WATER DEMANDS**
**FOR OTAY RANCH VILLAGES 2, 3, AND A PORTION OF 4**

| Land Use | Quantity | Unit Demand | Average Day Demands, gpd |
|---|---|---|---|
| **VILLAGE 2** | | | |
| Single-Family Residential | 986 units | 500 gpd/unit | 493,000 |
| Multiple-Family Residential | 1,800 units | 300 gpd/unit | 540,000 |
| Commercial | 18.7 ac | 1,785 gpd/ac | 33,380 |
| Industrial | 87.9 ac | 893 gpd/ac | 78,490 |
| School | 10.3 ac | 1,785 gpd/ac | 18,390 |
| CPF | 6.1 ac | 893 gpd/ac | 5,450 |
| **Subtotal Village 2** | | | **1,168,710** |
| **VILLAGE 3** | | | |
| Industrial | 176.5 ac | 893 gpd/ac | 157,610 |
| CPF | 10.2 ac | 893 gpd/ac | 9,110 |
| **Subtotal Village 3** | | | **166,720** |
| **VILLAGE 4** | | | |
| P-4 | 44.2 ac | --- | 14,500* |
| **TOTAL** | | | **1,349,930** |

***** The majority of the Village 4 Community Park will be irrigated with recycled water, but a preliminary analysis indicated an estimated average potable water use of 14,500 gpd.

## II-8.6b Recycled Water Demand

In accordance with Section 26 of the Otay Water District Code of Ordinances, Villages 2, 3, and a Portion of 4 will utilize recycled water for the irrigation of open space slopes, parks, parkway and median landscaping, and the common areas of schools, commercial, industrial, and multi-family residential sites. Figure 2 identifies the potential recycled water use areas and Table 3 provides the estimated recycled water demand.

**Figure 2**
**Potential Recycled Water Use Areas**

**TABLE 3**
**PROJECTED RECYCLED WATER DEMANDS FOR**
**OTAY RANCH VILLAGES 2, 3, AND A PORTION OF 4**

| Land Use | Area, Acres | Percentage to be Irrigated | Irrigated Acreage | Recycled Water Irrigation Factor, gpd/ac | Average Recycled Water Demand, gpd |
|---|---|---|---|---|---|
| Open Space Slopes, Parkways | 120[1] | 120 | 120 | 2,155 | 258,600 |
| Parks | 59.6 | 100 | 59.6 | 2,155 | 128,440 |
| Commercial/ CPF | 28.2 | 10 | 2.8 | 2,155 | 6,030 |
| School | 10.3 | 20 | 2.1 | 2,155 | 4,530 |
| Multifamily | 129.6 | 15 | 19.4 | 2,155 | 41,810 |
| Industrial | 264.4 | 5 | 13.2 | 2,155 | 28,450 |
| **TOTAL** | | | | | **467,860** |

[1] Preliminary Estimate

## II-8.7 MANDATED WATER CONSERVATION MEASURES

The State and many local Governments have mandated a number of water conservation measures. Table 4 summarizes the conservation measures that are mandated by the State of California.

**TABLE 4**
**MANDATED WATER CONSERVATION DEVICES**

| Device | Requirement |
|---|---|
| Showerheads | 2.5 gpm |
| Lavatory Faucets | 2.2 gpm |
| Sink Faucets | 2.2 gpm |
| Metering Faucets in Public Restrooms | 0.25-0.75 gal/cycle |
| Tub Spout Diverter | 0.1 gpm |
| Residential Water Closets | 1.6 gpf |
| Flushometer Valves | 1.6 gpf |
| Commercial Water Closets | 1.6 gpf |
| Urinals | 1.0 gpf |

Source: September 2001 Water Use Efficiency Report by Bahman Sheikh

## II-8.8 LOCAL WATER CONSERVATION REQUIREMENTS

There are a number of water conserving measures required by the Otay Water District and City of Chula Vista Landscape Manual. These include the use of recycled water for the irrigation of parks, median landscaping, open space slopes, and common landscaped areas where feasible. The Landscape Manual also requires some drought tolerant plant selection in the landscaping plan and the use of evapotranspiration controllers for parks and common landscaped areas. In addition, the City of Chula Vista has requested a weather station within the Village 4 Community Park.

The City of Chula Vista Water Conservation Plan Guidelines require the following three indoor water conservation measures for residential units and non-residential units.

**Residential Measures**

1. Hot Water Pipe Insulation. This measure involves the insulation of hot water pipes and separation of hot and cold water piping. This measure is estimated to cost an additional $50 during initial construction and result in annual savings of 2,400 gallons per unit.

2. Pressure Reducing Valves. Setting the maximum service pressure to 60 psi reduces any leakage present and prevents excessive flow of water from all appliances and fixtures. This measure is estimated to cost $100 and result in annual water savings of 1,800 gallons per unit.

3. Water Efficient Dishwashers. There are a number of water efficient dishwashers available that carry the Energy Star label. These units cost an additional $500 on average and result in an estimated yearly water savings of 650 gallons per unit.

**Non-Residential Measures**

1. Hot water pipe insulation.

2. Pressure reducing valves.

In addition, to comply with the City's current water conservation requirements, the developer must select at least one outdoor measure and one additional indoor or outdoor water conservation measure for residential development and non-residential development. The developer will implement the following two additional measures in single family residential units:

1. Dual Flush Toilets. The developer will install dual flush toilets in the single family residential units on the project. This measure is estimated to cost $200 and result in annual water savings of 4,000 gallons per year per unit.

2. Evapotranspiration Controllers. The developer will install evapotranspiration controllers on the single family residential units within the project. This measure is estimated to cost $175 per unit plus a maintenance fee of $48 per year and will result in annual water savings of 20,000 gallons per unit.

For the multi-family residential sites and non-residential sites, the following two additional measures will be implemented:

1. The use of water efficient irrigation systems.

2. The installation of evapotranspiration controllers to reduce irrigation usage.

## II-8.9 WATER CONSERVATION ESTIMATED SAVINGS

The estimated water savings for water conservation measures are based on the estimates provided in Section II-8.8 of this report. The potential water savings varies widely based on land use types. Multifamily residential units, for example, have much less opportunity to implement additional water saving measures than low density single family residential units. This is primarily because the common landscaped

areas of multi-family units are required to be irrigated with recycled water and, thus, there are no outdoor water conservation measures that can directly offset potable water usage in these areas.

The Village 2 project will incorporate a number of non-mandatory water conservation measures in multi-family residential and single family residential units. Tables 5 and 6 summarize the total estimated water savings for Village 2 based on these proposed measures. Based on 1,800 multifamily units and 986 medium density single family units within the Village 2 project at buildout, implementation of the measures in Tables 5 and 6 would result in estimated average potable water savings of 101,850 gallons per day for the residential portion of the project.

**TABLE 5**
**OTAY RANCH VILLAGE 2**
**MULTI-FAMILY PROPOSED WATER CONSERVATION MEASURES**

| Measure | Location | Yearly Water Savings, gpd/unit | Daily Water Savings, gpd/unit | Percentage of Total Usage[1] | Project Total Water Savings[2], gpd |
|---|---|---|---|---|---|
| Hot Water Pipe Insulation | Indoor | 2,400 | 6.58 | 2.2 | 11,840 |
| Pressure Reducing Valves | Indoor | 1,800 | 4.93 | 1.6 | 8,870 |
| Water Efficient Dishwashers | Indoor | 650 | 1.78 | 0.6 | 3,200 |
| ET Controllers | Outdoor | —[3] | --- | --- | —[3] |
| Water Efficient Irrigation Systems | Outdoor | —[3] | --- | --- | —[3] |
| **TOTAL** | | **4,850** | **13.29** | **4.4** | **23,910** |

[1] Based on 300 gpd/unit average usage.

[2] Based on 1,800 Multi-Family Residential Units.

[3] These Devices will reduce the amount of recycled water used for irrigation and have, therefore, not been included in the total potable water savings.

**TABLE 6**
**OTAY RANCH VILLAGE 2**
**SINGLE-FAMILY RESIDENTIAL WATER CONSERVATION MEASURES**

| Measure | Location | Yearly Water Savings, gpd/unit | Daily Water Savings, gpd/unit | Percentage of Total Usage[1] | Project Total Water Savings[2], gpd |
|---|---|---|---|---|---|
| Hot Water Pipe Insulation | Indoor | 2,400 | 6.58 | 1.3 | 6,490 |
| Pressure Reducing Valves | Indoor | 1,800 | 4.93 | 1.0 | 4,860 |
| Water Efficient Dishwashers | Indoor | 650 | 1.78 | 0.4 | 1,760 |
| Dual Flush Toilets | Indoor | 4,000 | 10.96 | 2.2 | 10,810 |
| ET Controllers | Outdoor | 20,000 | 54.79 | 11.0 | 54,020 |
| **TOTAL** | | **28,850** | **79.04** | **15.8** | **77,940** |

[1] Based on 500 gpd/unit average usage.

[2] Based on 986 Single Family Residential Units.

## II-8.10 IMPLEMENTATION MEASURES

The non-mandatory water conservation measures to be included in the residential component of the Village 2 project are listed in Tables 5 and 6. The non-residential development within the project will utilize hot water pipe insulation, pressure reducing valves, and water efficient irrigation system and evapotranspiration controllers.

## II-8.11 MONITORING

For the water conservation measures proposed to be incorporated into the Village 2 project, Table 7 summarizes the implementation timing for each measure, as well as the responsibility for monitoring the implementation of the measures.

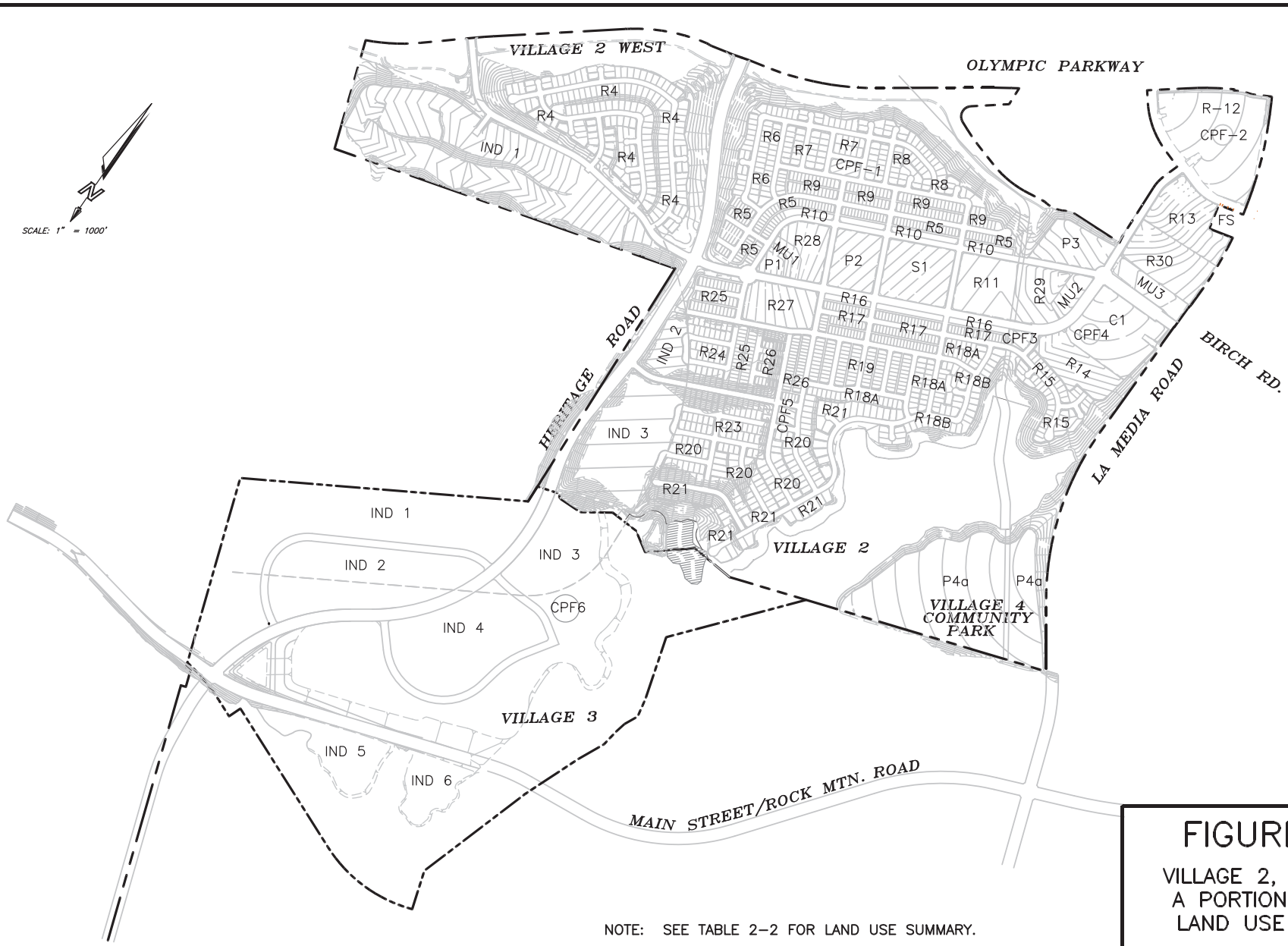
**TABLE 7**
**OTAY RANCH VILLAGE 2 IMPLEMENTATION PROGRAM**

| Water Conservation Measure | Responsibility for Implementation | Timing | Monitoring of the Implementation |
|---|---|---|---|
| Hot Water Pipe Insulation | Developer | Initial Construction | City Building Department |
| Pressure Reducing Valves | Developer | Initial Construction | City Building Department/Otay Water District |
| Water Efficient Dishwashers | Developer | Initial Construction | City Building Department |
| Dual Flush Toilets | Developer | Initial Construction | City Building Department |
| ET Controllers | Developer | Initial Construction | City Building Department |
| Water Efficient Irrigation System | Developer | Initial Construction | City Building Department |

# REFERENCES


1. Bahman Sheikh, Water Use Efficiency, Strategies for Proposed Residential Developments, September 2001.

2. City of Chula Vista Water Conservation Plan Guidelines, adopted May 27, 2003.

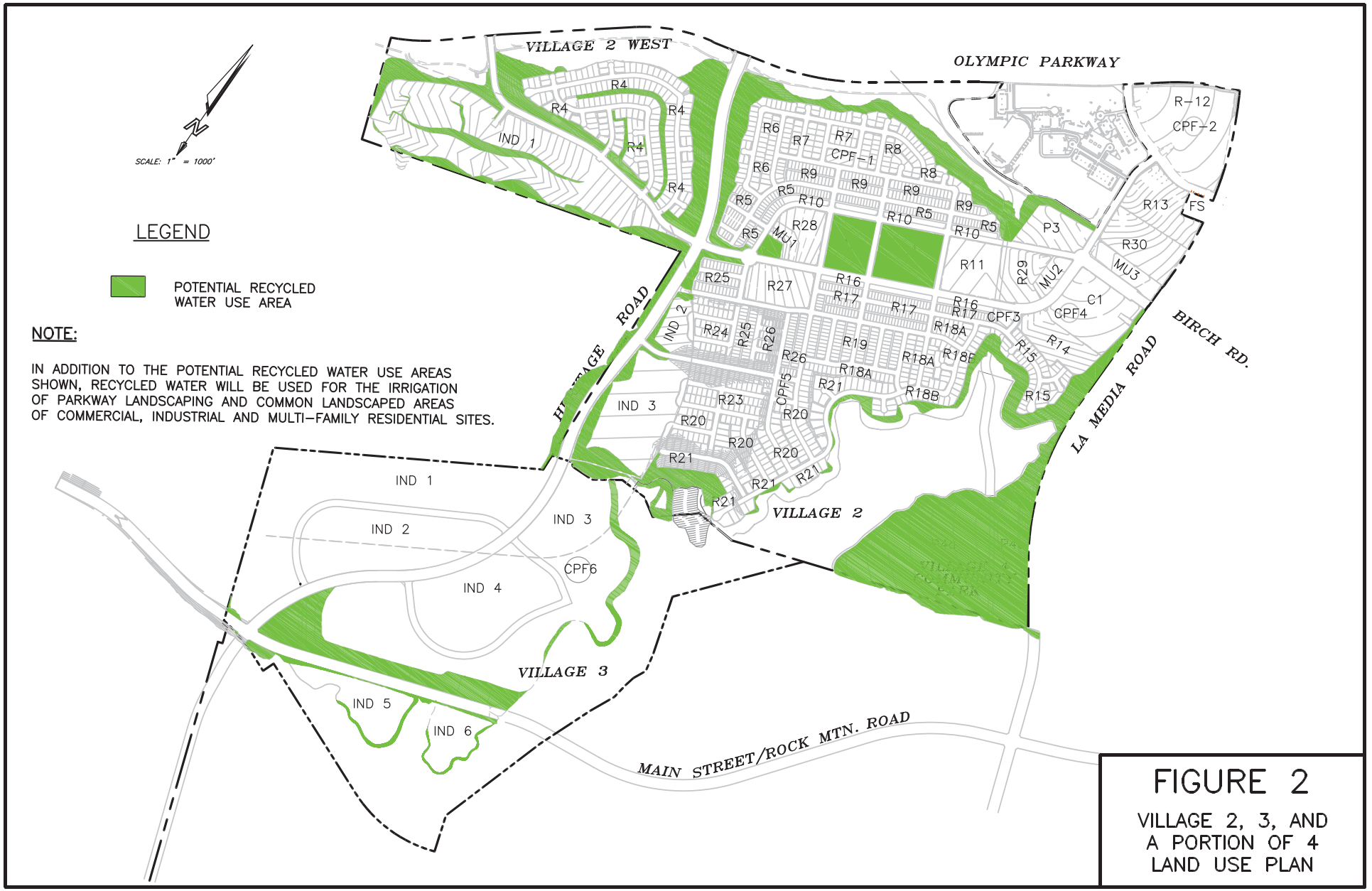



NOTE: SEE TABLE 2-2 FOR LAND USE SUMMARY.

# FIGURE 1

VILLAGE 2, 3, AND A PORTION OF 4 LAND USE PLAN

\\FS\DWG\605802\FIGURE1.DWG 02-22-06 13:18:48 LAYOUT: LAYOUT 1



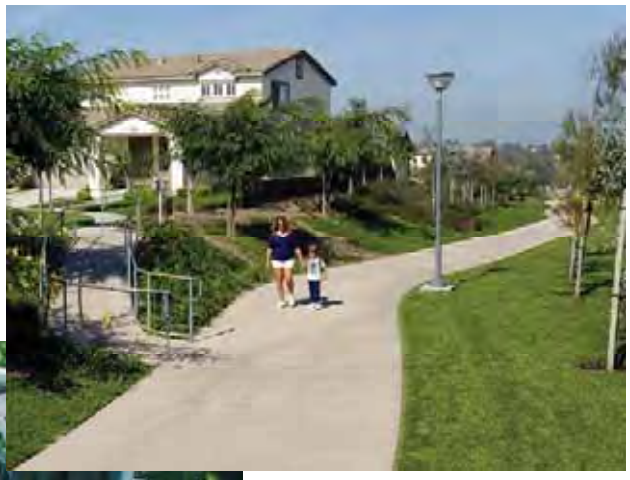

# FIGURE 2

VILLAGE 2, 3, AND A PORTION OF 4 LAND USE PLAN

\\FS\DWG\605802\FIGURE2.DWG 02-22-06 13:37:30 LAYOUT: LAYOUT 1

# Non-Renewable Energy Conservation Plan

Adopted May 23, 2006
By Resolution No. 2006-155



## I. INTRODUCTION

The Otay Ranch GDP requires the preparation of a Non-Renewable Energy Conservation Plan to identify feasible methods to reduce the consumption of non-renewable energy sources, including but not limited to, transportation, building design and use, lighting, recycling, alternative energy sources and land use.

Fossil fuels provide the majority of non-renewable energy sources in the San Diego region. These fuels are directly consumed in the form of gasoline, diesel fuel and natural gas, and indirectly consumed as electricity generated from these fuels. The goals, objectives and policies of the GDP provide for the long-range increase in conservation and reduction of consumption of non-renewable energy sources.

On November 14, 2000, the City Council adopted the Carbon Dioxide (CO2) Reduction Plan, which included implementing measures regarding transportation and energy efficient land use planning and building construction measures for new development. In this Plan, it was recognized that the City's efforts to reduce carbon dioxide emissions from new development are directly related to energy conservation and air quality efforts. As a result, the City initiated a pilot study to develop a program to update the guidelines for preparation of required Air Quality Improvement Plans (AQIP). The pilot study involved the development of a computer model to evaluate the relative effectiveness of applying various site design and energy conservation features in new development projects. The results of the pilot study confirmed that the application of the Otay Ranch village design concept supports the City's energy conservation goals.

Opportunities for energy conservation in new development fall into three categories: the arrangement and intensity of land uses; mass transit and alternative transportation modes; and building siting, design and construction. The greatest opportunities for significant conservation are transportation related. The planning of Otay Ranch and its villages maximizes these opportunities by concentrating intensity of development around new transit facilities, providing for a regional transit-way and encouraging pedestrian, bicycle and electric cart travel as an alternative to the automobile. Villages of Montecito & Otay Ranch Business ("Plan Area") have been designed in accordance with these energy conservation principles.

## A. Land Use and Community Design

Land use and community design that encourages energy conservation include:

- **Transit Oriented Development**
  Village of Montecito concentrates housing, commercial, community purpose, school and park land uses in a village core. A town center commercial development is located in the eastern area of the village. This land use plan and an integrated circulation system locates daily use areas within walking and cycling distance of most village residents. The Otay Ranch Business Park is designed as a business center with a loop circulation system to provide convenient access throughout the area. Public transit lines and stations are located within or in proximity to these concentrated land use areas.

- **Housing Efficiency**
  The Village of Montecito includes a high proportion of small single family and multi-family residences. These smaller and attached buildings use less energy for heating and cooling than larger, single-family detached homes

- **Street Widths, Pavement and Street Trees**
  Narrow streets and a reduction in pavement reduces heat build up and the demand for air conditioning. Street trees provide shade that further reduces temperatures.

## B. Transit Facilities and Alternative Transportation Modes

Otay Ranch, the Village of Montecito, and the Otay Ranch Business Park are designed to accommodate public transportation and alternative travel modes to reduce energy consumption:

- **Public transportation**
  Public transportation is an integral part of the Otay Ranch Community. The regional transit system includes a regional "yellow line" commuter line located on Olympic Parkway, a "red line" located on La Media Road, and "blue line" local Chula Vista transit and "green line" shuttle service buses. Yellow line stations are planned to be located approximately five to six miles apart with the nearest station to the Planning Area located at the Eastern Urban Center. A red line bus rapid transit station is planned to be located in the Village of Montecito commercial center. This station would serve commuters and the high school. A blue line bus will be located on Heritage Road to provide transit service to Village of Montecito residents as well as adjacent villages. This line will also provide the transit access for employees of the industrial

park in the Village Three. A bus line with several stops can be located in Village of Montecito along Santa Victoria, (the Secondary Village Entry Street), the primary east-west circulation street that connects Heritage and La Media Roads. Village Two West may also be served by a bus route and bus stop centrally located along the main access street in the village. The transit plan, including specific project access points, and internal circulation, including bicycle, pedestrian, and road crossings will be determined by the City Engineer, Director of Planning and Building, and Park and Recreation Director during the Tentative Tract Map process. Variations to these concepts may occur where safety or efficiency can be enhanced.

- **Alternative Travel Modes**
  Low speed electric vehicle ("LSEV") is envisioned as an alternative mode of travel within and between villages. In Village of Montecito, a Village Pathway, designated for LSEV, bicycle and pedestrian use traverses the village within the core area. LSEVs may also travel on all village streets with a maximum travel speed of 25 miles per hour.

## C. Building Siting and Construction

Energy conservation features for building siting and construction include the following:

- **Improved Construction Standards**
  Construction in the Plan Area will adhere to the Building Energy Efficiency Standards in Title 24 of the California Code of regulations. In addition, the Developer has agreed to participate in the Chula Vista GreenStar Building Efficiency Program.

- **Solar Access**
  Passive solar design and building orientation can take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.

- **Lighting**
  Energy efficient lighting will be used to light streets, parks and other public spaces. Builders will be encouraged to use energy efficient lighting in commercial and residential development.

# Fire Protection Plan

## for

## Otay Ranch Villages 2, 3 and a portion of 4

## City of Chula Vista


*submitted by*

*HUNT RESEARCH CORPORATION*

*P.O Box 291, Solvang, California 93464*

*805-688-4625*

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## APPENDIX LIST

## 1. INTRODUCTION AND SCOPE

This Fire Protection Plan for the Otay Ranch Villages 2, 3 and a portion of 4 is required by the Chula Vista Fire Department and responds fully to the requirements of Article 86 of the 2001 California Fire Code, which requires a Fire Protection Plan for all new development in the Urban Wildland Interface. This plan also fully complies with the City of Chula Vista Fire Code. This Fire Protection Plan reflects the recommendations of the consultant, Hunt Research Corporation, and is subject to review and approval by the Chula Vista Fire Marshal.

Per discussions with the Fire Marshal, the focus and scope of this plan is limited to the perimeter areas of the development exposed to Wolf Canyon, and to the remaining perimeter slopes around the development. The remainder of the development is considered by the Fire Marshal to be an urban, non-wildland, fire threat and therefore out of the scope of this plan. Enhanced structural protection is therefore limited to "hardening" structures on the perimeters facing Wolf Canyon. Structures and vegetation elsewhere in the development are not considered an Urban Wildland Interface threat by the Fire Marshal, other than the spotting hazard. Recommendations regarding private property landscaping and decks on private lots are included in the Appendix D of this plan.

## 2. PROJECT DESCRIPTION

This project consists of Village 2 (Village of Montecito), Village 3 (Otay Ranch Business Park) and a portion of Village 4 (Community Park) within the Otay Ranch. The site is comprised of 1,187 acres located south of Olympic Parkway, east of the Otay Landfill, north of the Otay River Valley and west of Village 7. Village 2 consists of 986 single family residential lots and 1,800 multi-family lots (including 2 story detached homes, 2 story row townhomes, duplexes and triplexes), 20 acres of commercial/retail uses, 59 acres of parks, open space, existing Chula Vista Fire Station #7, six community purpose facility sites, existing Otay Ranch High School and a new elementary school site. Access to this site is provided from Olympic Parkway, La Media Road and the future extension of Heritage Road, all six-lane arterials.

Single-family detached dwellings range from 3,249 sq feet to 5,687 square feet.

The estimated 24-hour population of Village 2 is 8,458 persons (based on an estimate of 3.036 persons per household x 2,786 units).

Village 3 is a 368.4 acre site with 176.5 acres of business park uses, a 10.2 acre community purpose facility site, and slope areas. Access to this site is provided from the future extension of Heritage Road and Main Street/Rock Mountain Road, all six-lane arterials.

Village 4 is comprised of a 44+ acre community park site. Access to this site is provided via La Media Road, which forms the eastern boundary of the Community Park.

The project area is currently undeveloped agricultural land. However, open space slope areas created to the north, east and west, will be fully irrigated and landscaped in conjunction with the development of the site. Wolf Canyon is a natural open space area located along the southern edge of Village 2, forming the eastern edge of Village 3 and surrounding the Village 4 Community Park on the northern and western edges. Wolf Canyon is part of the City of Chula Vista Multiple Species Conservation Plan (MSCP) Preserve and will remain undisturbed, natural open space. Wolf Canyon presents the most significant fire threat to this project, as vegetation will continue to grow unmanaged and increase the fire problem.

The site is basically flat, except for manufactured slopes (open space areas) on the perimeters. These range from 2:1 to 5:1. Wolf Canyon slopes are approximately 20-50%.

Average maximum summertime high temperature is 75 degrees F, in October. Extreme maximum in September/October is about 105 degrees f. Average wintertime high is 65 degrees F. Data is from the NWS, Western Regional Climate Center.

## 3. FIRE DEPARTMENT RESPONSE

The site is currently served by the Chula Vista Fire Department. The closest station is Station 7, at 1640 Santa Venetia, which is within Village 2. This station was funded through the payment of City of Chula Vista Public Facility Development Impact Fees.

The following Table summarizes the information regarding the existing fire stations, which would respond to this site:

| Station # | Location | Total Staffing | Type of companies | Miles and driving time within Village |
|---|---|---|---|---|
| 7 | 1640 Santa Venetia | 7 | 1 engine co<br>1 ladder truck<br>1 future Batt. Chief | Worst case furthest distances: approx. 2.1 miles/ 5.12 minutes (assuming 25 MPH speed to Industrial Site #1; Santa Victoria west of Brinkeroff) |

The fire station crews provide EMT level response. Private ambulance provides paramedic level service and transport.

The total response time from notification of an emergency via 911, to arrival on scene at the furthest point, is estimated at 7 minutes for the first fire engine.

| Station # | Total current daily/annual calls for Station 7 | Estimated daily/annual calls generated by this village | Total estimated daily/annual calls (current & Village 2) |
|---|---|---|---|
| 7 | 2.7/1000 | 1.4/524 | 4.1/1524 |

The Table reflects that this village should not generate a significant number of emergency calls. The estimated call generation is 1.4 per day. 85% of these calls will most likely be Medical Emergencies.

The staffing is adequate to support a fire in a sprinklered building, or initial attack at a residence. It is also adequate for an Advanced Life Support (paramedic) medical emergency. The response is adequate for a small vegetation fire with no wind, however, it is not adequate for a significant vegetation fire in fire weather conditions with wind. In that case, additional Fire agencies from surrounding communities would be dispatched.

The first alarm response to a vegetation fire on site would be 3 engine companies, 1 truck company, and 1 Battalion Chief.

STANDARD VEGETATION FIRE RESPONSE SCENARIOS: CHULA VISTA FIRE DEPARTMENT:

This table reflects the units dispatched to a vegetation fire in the City based upon the on-site risk. Wolf Canyon should be considered a High Wildland Risk. Other perimeter areas should be considered a Medium Wildland Risk.

| Type of vegetation Fire Risk | Code | Engines | Ladder Trucks | Battalion Chiefs | Brush Fire Engine |
|---|---|---|---|---|---|
| Low Wildland risk | LW | 1 | 0 | Notify B-52 | 0 |
| Medium Wildland Risk | MW | 1 | 0 | 1 | 1 |
| High Wildland Risk | HW | 3 | 0 | 1 | 2 |

The first alarm response to a structural fire would be 3 engine companies, 1 truck company, 1 Battalion Chief, for a total crew of 14 firefighters. This size of crew can control a fire in a non sprinklered 3,600 sq foot, 1 story structure based on the fire flow determined by the National Fire Academy fire flow formula which results in a demand of 360 GPM (2 hose lines). The first alarm crews can handle a single unit fire in a building

up to 3 stories high. Beyond 3 stories, additional firefighters will be needed due to logistical problems in rescue and firefighting operations on upper floors.

There is adequate response time and acceptable proximity from the existing fire station to the furthermost point in the project, based upon the risk. National insurance industry (ISO) standards for maximum distance from a fire station (1.5 miles) and national response time standards (4 minutes driving time to 90% of all calls) are substantially complied with. The national standard is to arrive at 90% of all structure fires and medical emergencies in 4 minutes driving time. It is critical to arrive at an emergency involving cessation of breathing or heart action, and take action within 5.5 minutes of the start of the emergency.

A future fire station is planned for the East Urban Center; east of Village 7. That station will further enhance response to Villages 2, 3 and 4 and will help mitigate instances of multiple queuing of calls as population increases.

As indicated above, the development will not generate a significant number of emergency calls. It is estimated that 85% of the calls will be medical emergencies.

## 4. FIRE HISTORY

There is no known significant fire history on site, other than controlled burns over the years. Any future fires will probably be based on the wind, terrain and fuel within Wolf Canyon.

The consultant inspected the site, photographed the site, and BEHAVE fire spread models were generated. The results are as follows:

## 5. RISK ASSESSMENT/FIRE SPREAD MODELS

When fully developed, the majority of the project area will be surrounded by major roadways and permanently landscaped and irrigated perimeter slopes which will buffer the residential neighborhoods from the roadways. La Media Road, a six-lane arterial, and associated permanently landscaped and irrigated slopes form the eastern boundary of the Village 4 Community Park. The Wolf Canyon drainage, a natural open space area, is adjacent to a portion of the southern project boundary of Village 2 ,the eastern boundary of Village 3 and the northern and western boundary of the Village 4 Community Park. Wolf Canyon is a part of the Otay Ranch Resource Management Preserve and the MSCP and is protected and managed under the provisions of the Otay Ranch Resource Management Plan (RMP) and the Chula Vista MSCP Subarea Plan. Based on Biological Resources mapping completed in 2002 by Dudek & Associates, the area is primarily covered in a combination of agricultural land, annual grass, Coastal sage scrub, mule fat scrub, sage/buckwheat and Maritime succulent scrub. Mule fat scrub dominates the riparian area, and coastal sage scrub and annual grass dominate the south aspect. In future years, as a result of the objectives of the MSCP, heavy, flammable, vegetation will grow

in this Preserve area, potentially increasing the current fire hazard. The modeling done for this plan attempts to reflect both the current risk and the future risk. The Wolf Canyon open space area presents the most significant wildland threat to this project. It should be noted that the MSCP provides guidelines for brush management activities that include the clearing of dead underbrush and thinning of canopies created by tall plants (MSCP Subarea Plan; Page 7-17). In addition section 7.4.4.3 "Emergency Brush Management" provides the following guidelines for additional permitted brush management activities:

> "In the event that the City Fire Marshal determines an emergency situation exists, minimal additional brush management may be undertaken under the direction of the Fire Marshal. In such an emergency situation, the Fire Marshal will adhere to the Memorandum of Understanding between the Wildlife Agencies, California Department of Forestry, the San Diego Fire Chief's Association, and the Fire District's Association of San Diego County dated February 26, 1997" (MSCP Subarea Plan; Page 7-18)

BEHAVE fire spread models were generated for the site, by Scott Franklin, based on the vegetation present before development, and the proposed vegetation. The latest versions of the BEHAVE model system were used. Models were generated for summer fires and fall fires. Fuel models for areas on the north, east, and west are fuel model (FM) 1; grass less than 1'. The southern boundary is Fuel Model 1 with some Fuel Model 18, Sage/Buckwheat. It should be noted that on wet years or El Nino episode years, FM-1 will become FM-3; grass over 2' tall. For that reason, both FM-1 and 3 were modeled. In addition, a sh-7 model; heavy 6' high shrub, was generated. For planning purposes, FM-4; 6' high chaparral, was employed as worst case. The following inputs replicate weather and fuel conditions of October 2003 in San Diego County, specifically the Cedar Fire.

Fall Fires:

Inputs to models:

Month: October
Time of day: 12 noon
One hour fuel moisture: 2%
Ten hour fuel moisture: 2%
100 hour fuel moisture: 3%
Live fuel moisture: 50%
20' wind speed: 40 MPH; gusting to 50 MPH
Air temperature: 95 degrees f
Slopes; 33 to 50%

Outputs of the models:

FM-1: light grass:

Rate of spread: 665 ch/hr or 9 MPH
Flame length: 13'
Spotting distance; 0.9 miles

FM 18: Sage/ Buckwheat
Rate of spread: 127 ch/hour or 2 MPH
Flame length: 32.1'
Spotting distance: 1.6 miles

FM 3: Grass over 2'

Rate of spread: 555 ch/hour or 7 MPH
Flame length: 32.6'
Spotting distance: 1.6 miles

FM sh-7: Heavy shrub; 6' high

Rate of spread: 4.75 MPH
Flame length: 42.5'
Spotting distance: 2.0 miles

FM 4: Chaparral; 6' high

Rate of spread: 13.39 MPH
Flame length: 75.2'
Spotting distance: 3.0 miles

Summary:

Because of extreme weather, all models display a probability of ignition of 100%. This means that out of 100 flaming firebrands flying down wind, 100 would ignite a new fire if landing in flammable fuel.

Summer Fire Models:

The following inputs were used for the summer fires:

1 hour fuel moisture: 3%
10 hour fuel moisture: 3-4%
100 hour fuel moisture: 5%
Live Herbaceous Moisture: 70%

Live Woody Moisture: 70%
20 ft windspeed upslope: 15 MPH
Air temperature: 90 degrees F
Slope: 37%

Outputs:

FM 1; Light Grass:

Rate of spread: 0.6 MPH
Flame length: 5.6'
Spotting distance: 0.3 miles

FM 18: Sage/Buckwheat

Rate of spread: 0.6 MPH
Flame length: 19.2'
Spotting distance: 0.6 miles

FM 3: Grass over 2'

Rate of spread: 2 MPH
Flame length: 17.3'
Spotting distance: 0.6 miles

FM sh-7: Heavy shrub; 6' high

Rate of spread: 3.4 MPH
Flame length: 34.7'
Spotting distance; 1.8 miles

FM 4: 6' Chaparral

Rate of spread: 2.77 MPH
Flame length: 34.7'
Spotting distance: 0.9 miles

SUMMARY:

The models indicate that the estimated worst-case scenario is a fire in 6' high chaparral in Wolf Canyon open space areas during the fall. The flame lengths of 75.2' necessitate the 150' Fuel Modification Zone (2 times the flame length). The model indicates a very rapid rate of fire spread, 13.39 MPH, and high potential for igniting spot fires in any flammable vegetation in the development.

The estimated worst-case fire in Wolf Canyon open space areas during the summer would be in 6' high shrubs (sh-7). Flame lengths would be 34.7' and the rate of spread would be 3.4 MPH. The spotting distance downwind would be 1.8 miles (9,504').

Based on the models, airborne burning material from a fire in Wolf Canyon open space areas can spot into the development, or landscaped zones on the perimeter, and start additional fires. Therefore, it is critical that structures be properly protected from fire, and that all landscaping in the development be of a fire resistive type and properly maintained. In future years, the fuel in the open space areas will continue to grow and will increase the fire hazard beyond that predicted in the current models. It must be noted that BEHAVE models are estimates based on actual fire experience. Actual fire behavior can be greater or less intensive.

Based on the flame lengths in the area of the project, and the requirements of the Fire Marshal, a 150' Brush Management Zone should be provided at the perimeter adjacent to Wolf Canyon, with the first 50' permanently irrigated and the remaining 100' irrigated on a temporary basis to allow for plant establishment.. 90' Brush Management Zones are recommended elsewhere on perimeter slopes surrounding the project. In addition to the 150' setback for structures abutting Wolf Canyon, the perimeter structures abutting Wolf Canyon should be set back (built away from) from the slope where possible, with the objective of preventing direct flame contact upon a structure.

## 6. FIRE PROTECTION PLANNING AREAS

As this project is a unique combination of various uses and fire risks, it has been divided into two Fire Protection Planning Areas (FPPAs) for the purpose of organizing the recommendations set forth in this plan. Most of the project is comprised of graded relatively flat development areas with no natural vegetation cover. It presents more of an urban type risk than an Urban Wildland Interface (UWI) threat. However, there is a significant UWI threat along Wolf Canyon. Therefore, the entire village cannot be treated the same relative to fire protection requirements. There are certain baseline UWI Fire Protection requirements that apply to all areas due to the spotting potential; further, there are certain enhanced or focused requirements, which apply to both FPPAs.

The two UWI Fire Protection Planning Areas are depicted in Appendices E and F and are described below:

FPPA "A": The perimeter slopes along the southern edge of Village 2, eastern and southern edge of Village 3 and northern and western edge of the Village 4 community park. This area represents the primary fire threat to this project. Structures on the perimeter will need to be hardened against direct fire exposure and flying brands. This area will require the most intensified UWI fire protection for this project.

FPPA "B": All other perimeter slopes equal to or greater than 10% gradient and an elevation change greater than 15 vertical feet, per specifications of the Fire Marshal.

Brush Management Zones must, at a minimum, start at the private property line. In some conditions, a portion of the private lot is within the Brush Management Zones. Consideration should be given to ensure slope stability and prevent erosion when determining plant palettes and maintenance programs for these areas.

## 7. PERIMETER DEFENSIBLE SPACE AND BRUSH MANAGEMENT ZONES

Based upon the fire history, fire risk assessment, on site inspection, review of maps, and generation of the BEHAVE models, the following brush management recommendations are provided with the objective of protecting structures from ignition due to a vegetation fire. Within FPPA "A," the three Brush Management Zones begin at the MSCP Preserve Boundary and extend 150' into the manufactured slopes/development area on the Wolf Canyon edge. The three 50 foot brush management zones within FPPA "A" are more fully described below. All brush management activities within FPPA "A" (Zone 3) must comply with the MSCP Subarea Plan requirement:

> "...To the extent practicable, non-emergency brush management in zone 3 will be undertaken outside the bird breeding seasons (April 1 through June 31) in areas where breeding and/or nesting may occur." (MSCP Page 7-17)

Within FPPA "B", a 90' Brush Management Zone (comprised of three 30 foot zones) is provided within FPPA "B" within the perimeter manufactured slopes with a slope gradient of 10% or greater adjacent to Olympic Parkway, Heritage Road, Rock Mountain Road, and La Media Road. FPPA "B" is more fully described below. All brush management zones must be installed in conjunction with adjacent construction and shall be maintained annually, prior to May 1, and more often as needed, on an ongoing basis.

In addition to the Brush Management Zones, recommendations are provided to private property owners, in Appendix D of this plan, for proper planting and maintenance on their lots. The developer cannot regulate such planting but recommends that it be done on an ongoing basis, and will provide each buyer with a private property owners fire safe landscaping guide. Proper fire safe planting should be done and proper, ongoing, maintenance should be done.

Maintenance of the perimeter slopes shall be funded through the Community Facilities District (CFD) and administered by the City of Chula Vista. This will assure long term maintenance of these areas.

## A. Fire Protection Planning Area A: Wolf Canyon perimeter

Planting and irrigation requirements for Fire Protection Planning Area "A" are provided below. In addition, all materials listed in the Prohibited Plant List (Appendix A) are prohibited within all three brush management zones. An Approved Plant List for FPPA "A" is provided below.

**Zone 1: 0-50'**

- Irrigated zone
- No trees
- Plant height requirements:
  - 75% of the plant material may not exceed 18" in height
  - 25% of the plant material may not exceed 24" in height
  - Randomly placed CVFD approved succulent type plant materials may exceed the height limitations, provided they are spaced in groups of no more than 3 plants and a minimum of five feet away from described "clear access routes."
- There shall be no hedges or shrubs

**Zone 2: 51-100'**

- Irrigated to ensure the establishment of vegetation intended to stabilize the slopes and minimize erosion. Irrigation to consist of above ground irrigation lines with sprinkler heads that spray 360 degrees. When the plants have become established, the sprinkler heads will be adjusted to spray only 180 degrees toward the upper 50 feet of the slope.
- Plant height requirements:
  - 75% of the plant material may not exceed 36" in height
  - 25% of the plant material may not exceed 48" in height
  - Randomly placed CVFD approved succulent type plant materials may exceed the height limitations, provided they are spaced in groups of no more than 3 plants and a minimum of five feet away from described "clear access routes."
- No trees
- Shrubs may be planted in clusters not exceeding a total of 400 sq ft.
- A distance of no less than the width of the largest shrub's mature spread shall be provided between each shrub cluster.
- Non-shrub avenues shall be included to provide a clear access route from toe of slope to top of slope and shall be a minimum width of 6' and spaced a distance of 200' lineal feet on center.
- When shrubs or other plants are planted underneath trees, the tree canopy shall be maintained at a height no less than three times the shrub or other plant's mature height (break up any fire laddering effect).
- There shall be no hedges.

**Zone 3: 101-150'**

- Irrigated to ensure the establishment of vegetation intended to stabilize the slopes and minimize erosion. Irrigation will consist of above ground irrigation lines that will be completely removed upon plant establishment.
- Plant height maximum: 36"
- No trees
- Shrubs may be planted in clusters not exceeding a total of 400 sq ft.
- A distance of no less than the width of the largest shrub's mature spread shall be provided between each shrub cluster.
- Non-shrub avenues shall be included to provide a clear access route from toe of slope to top of slope and shall be a minimum width of 6' and spaced a distance of 200' lineal feet on center.
- There shall be no hedges.

**Exceptions:**

Trees may be placed within the Brush Management Zones in areas where public streets are included in the Brush Management Zone, including, but not limited to La Media Road on the perimeter of the project area and Paterna Drive, located along the Wolf Canyon edge. The following criteria must be followed:

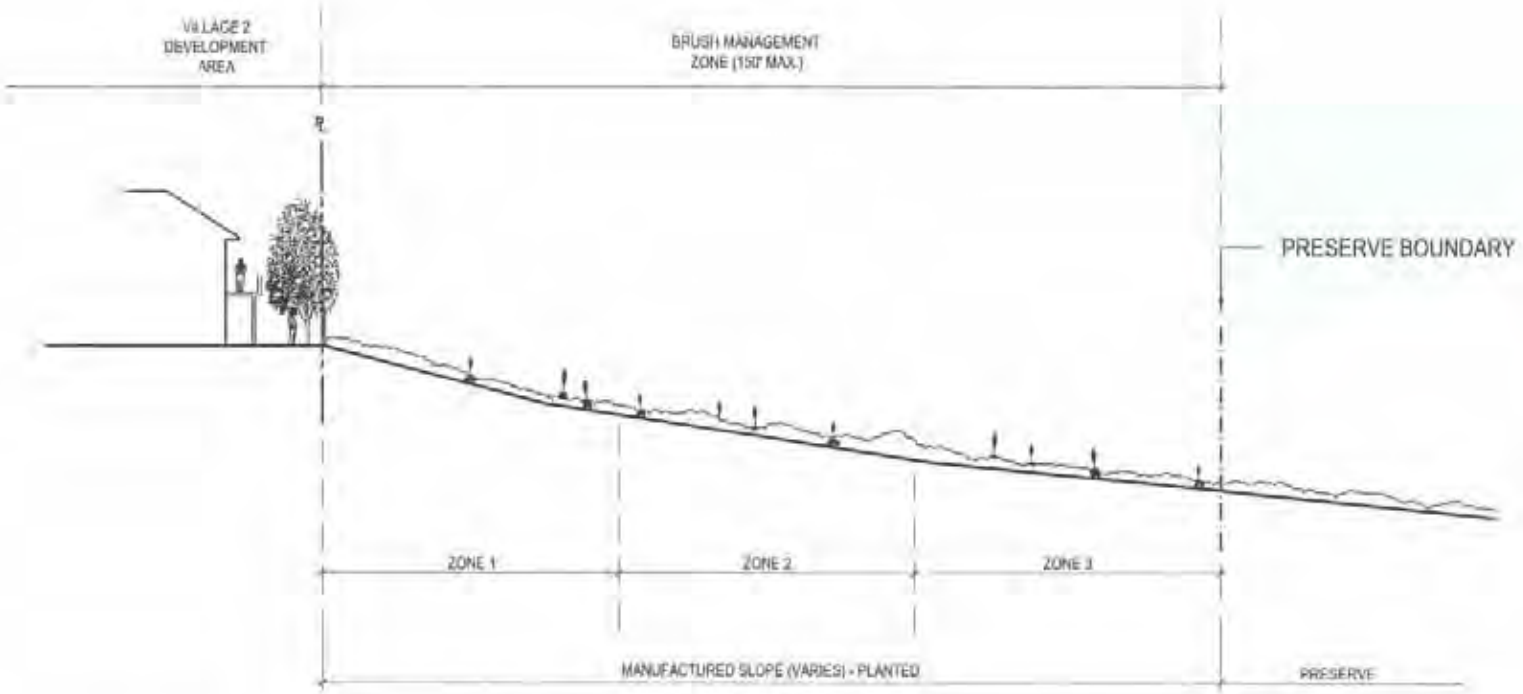
- Tree spacing to be 20' between mature canopies (30' if adjacent to a slope steeper than 41%
- Trees must be limbed up 1/3 height of mature trees or 6', whichever is greater
- No tree canopies lower than 13'6" over roadways
- No trees shall be planted that are listed on the Prohibited Plan List (Appendix A)
- No flammable under story is permitted beneath trees
- No tree limbs/branches are permitted within 10' of a structure.

**Fire Protection Planning Area "A" Approved Plant List**

| Common Name | Scientific Name |
|---|---|
| Toyon* | *Heteromeles arbutifolia* |
| Bladderpod* | *Isomeris arborea* |
| <no common name>* | *Lycium andersonii* |
| Hollyleaf cherry* | *Prunis ilicifolia* |
| Red berry* | *Rhamnus crocea* |
| Fuchsia flowering gooseberry* | *Ribes speciosum* |
| Goatnut* | *Simmondsia chinensis* |
| Bush sunflower | *Encelia Californica* |
| Golden yarrow | *Eriophyllum confertiflorum* |
| Common tarplant | *Hemizonia fasciculata* |
| Arroyo lupine | *Lupinus succulentus* |
| Purple needlegrass | *Nassella pulchra* |
| Blue eyed grass | *Sisyrinchium bellum* |
| Coast cholla | Opuntia prolifera |
| Coast prickly pear | Opuntia littoralis |
| <no common name> | Opuntia oricola |
| Snake cholla | Cylindropuntia californica var. californica |
| Mohave yucca | Yucca schidigera |
| Salt grass | Distichlis spicata |
| Our Lord's candle | Yucca whipplei |
| San Diego sunflower | Viguiera laciniata |

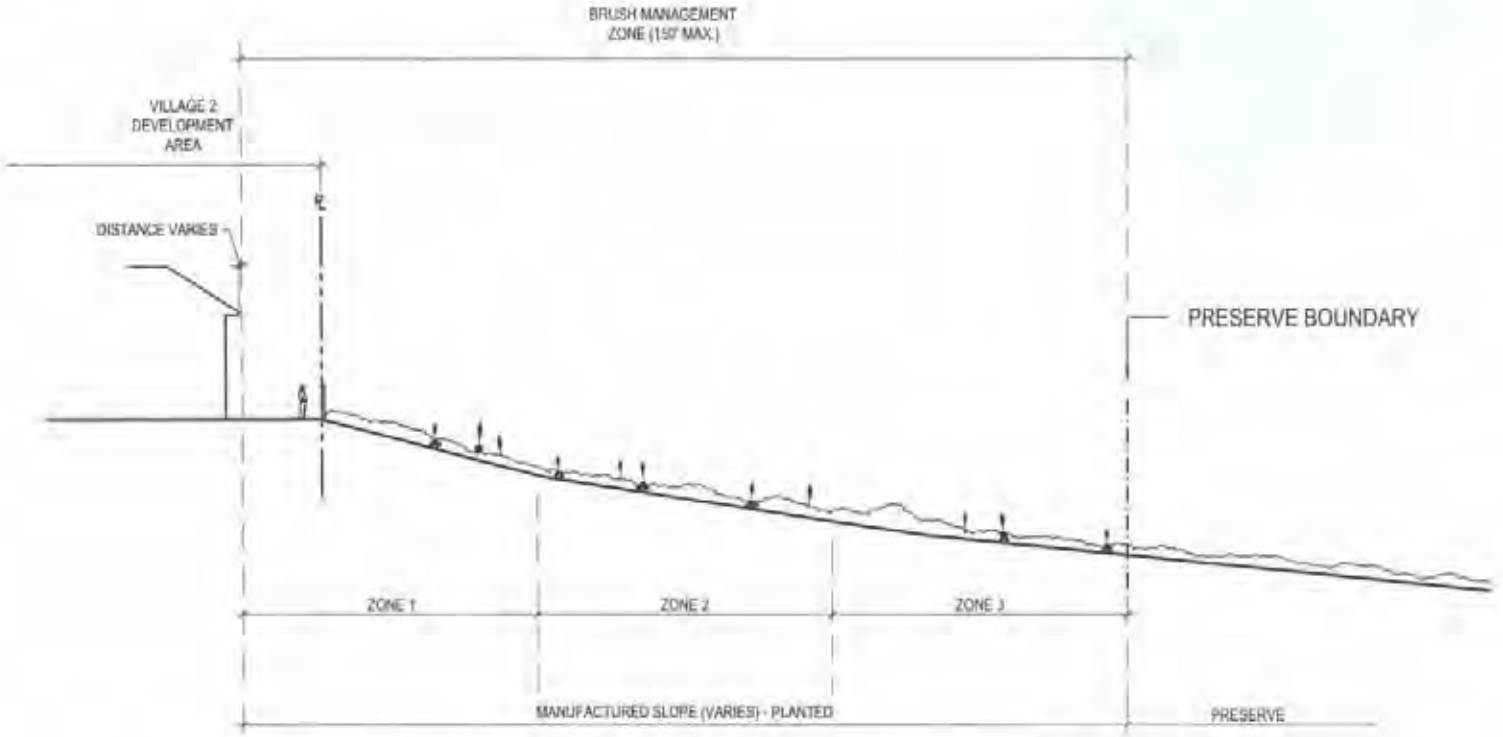
* Containers only, others can be hydroseeded

Exhibits 1 - 6 depict the various conditions that exist within FPPA "A" within Village Two, Three and the Village Four Community Park.



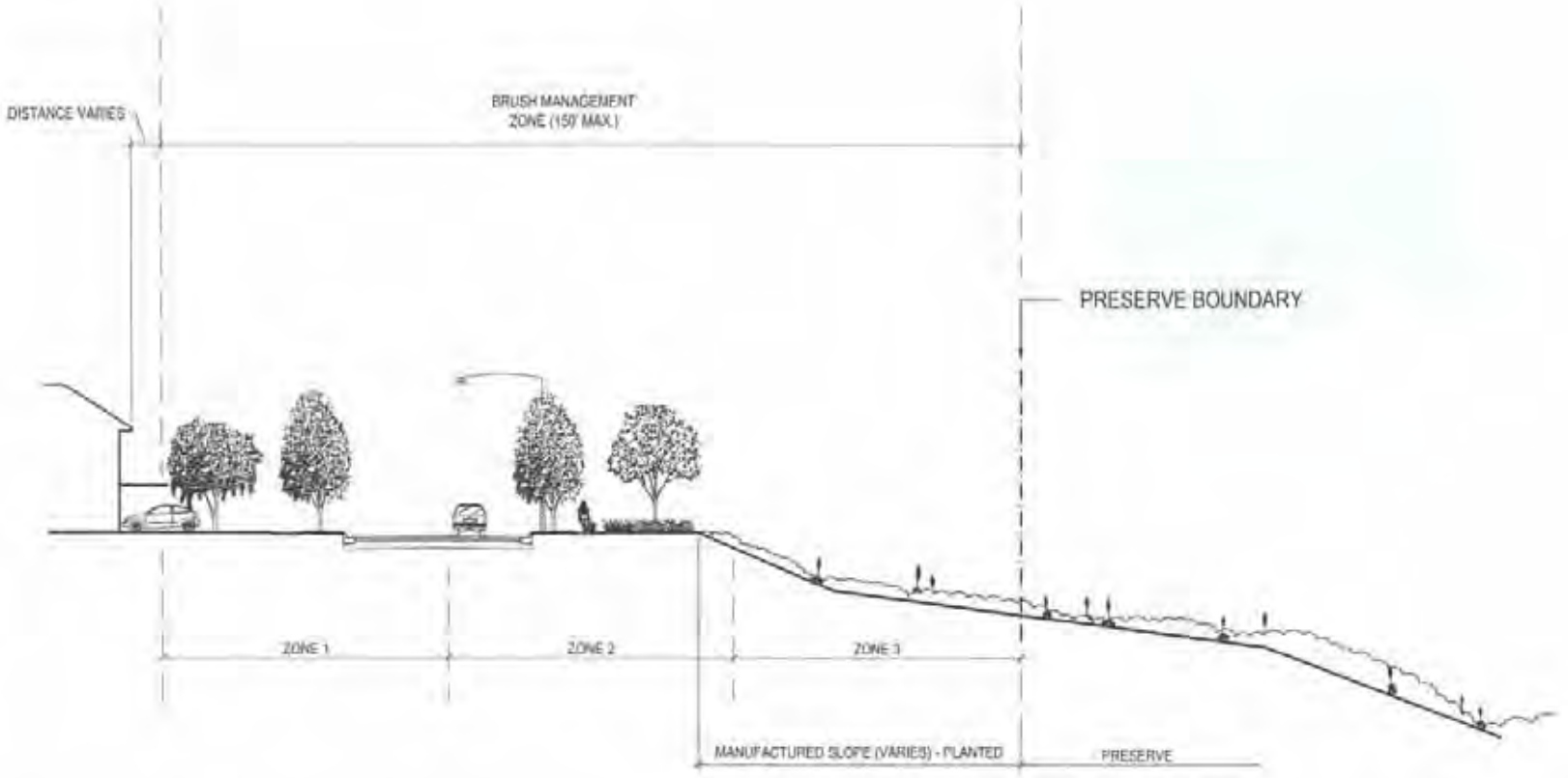

Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 1 Scale: 1" = 20'

Otay Ranch - Village 2




Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 2 Scale: 1" = 20'

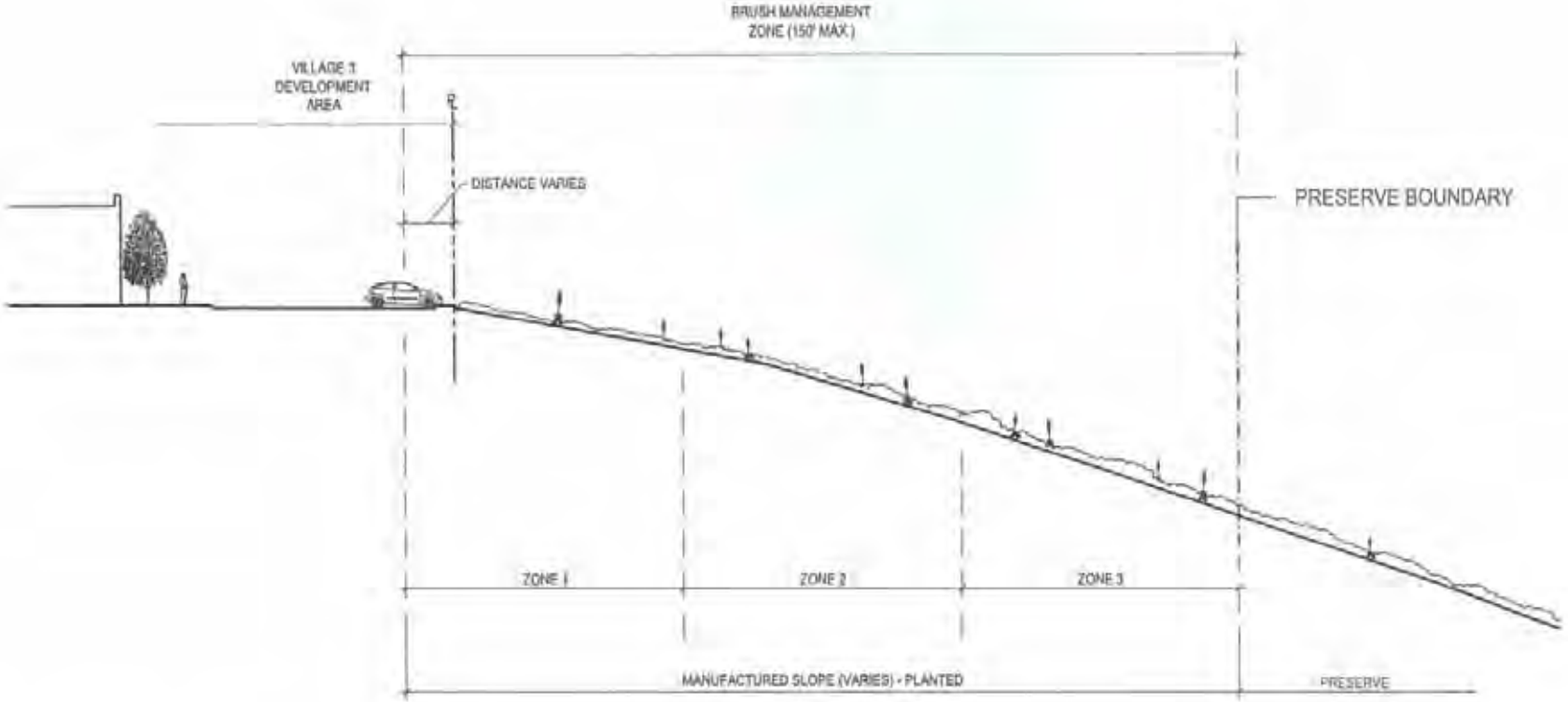
Otay Ranch - Village 2




Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 3

Scale: 1" = 20'

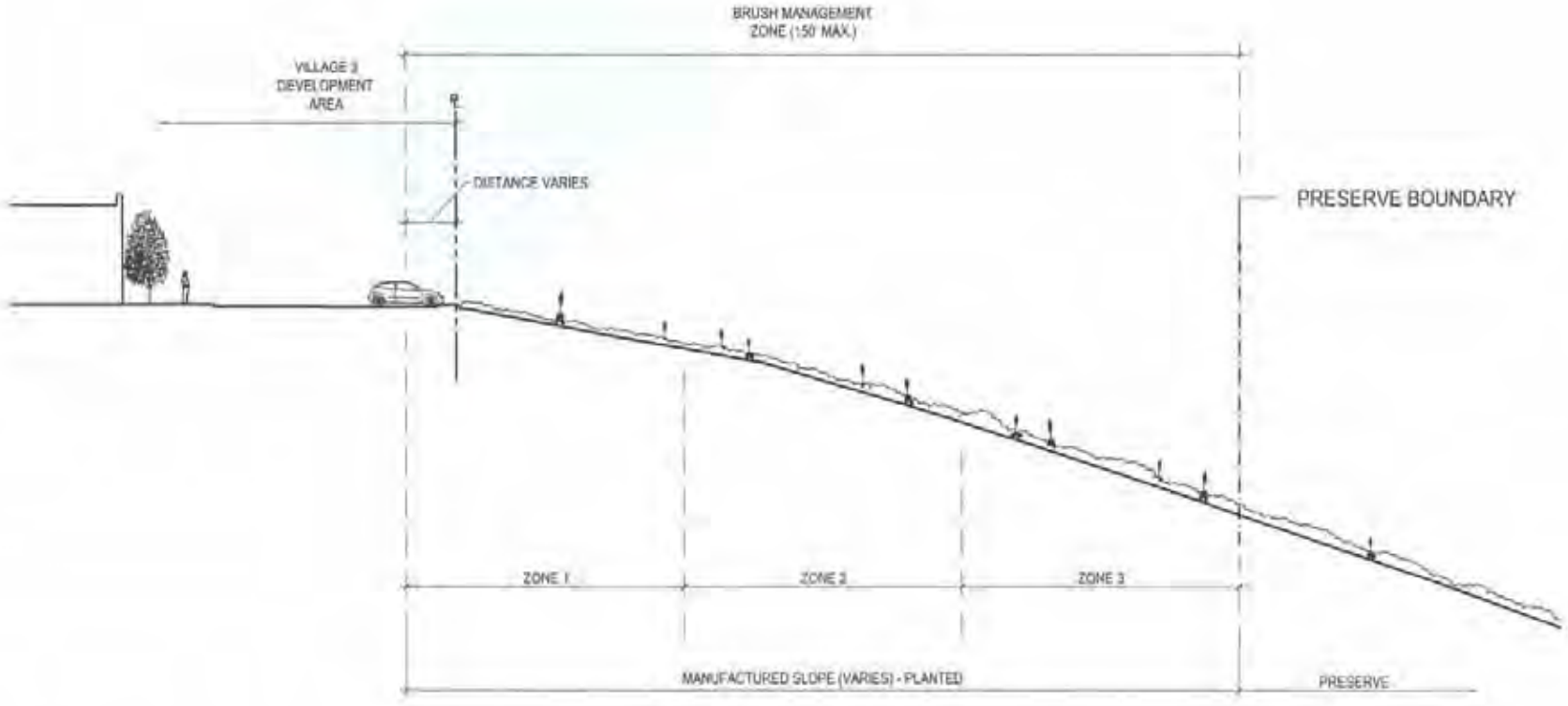
Otay Ranch - Village 2




Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 2

Scale: 1" = 20'

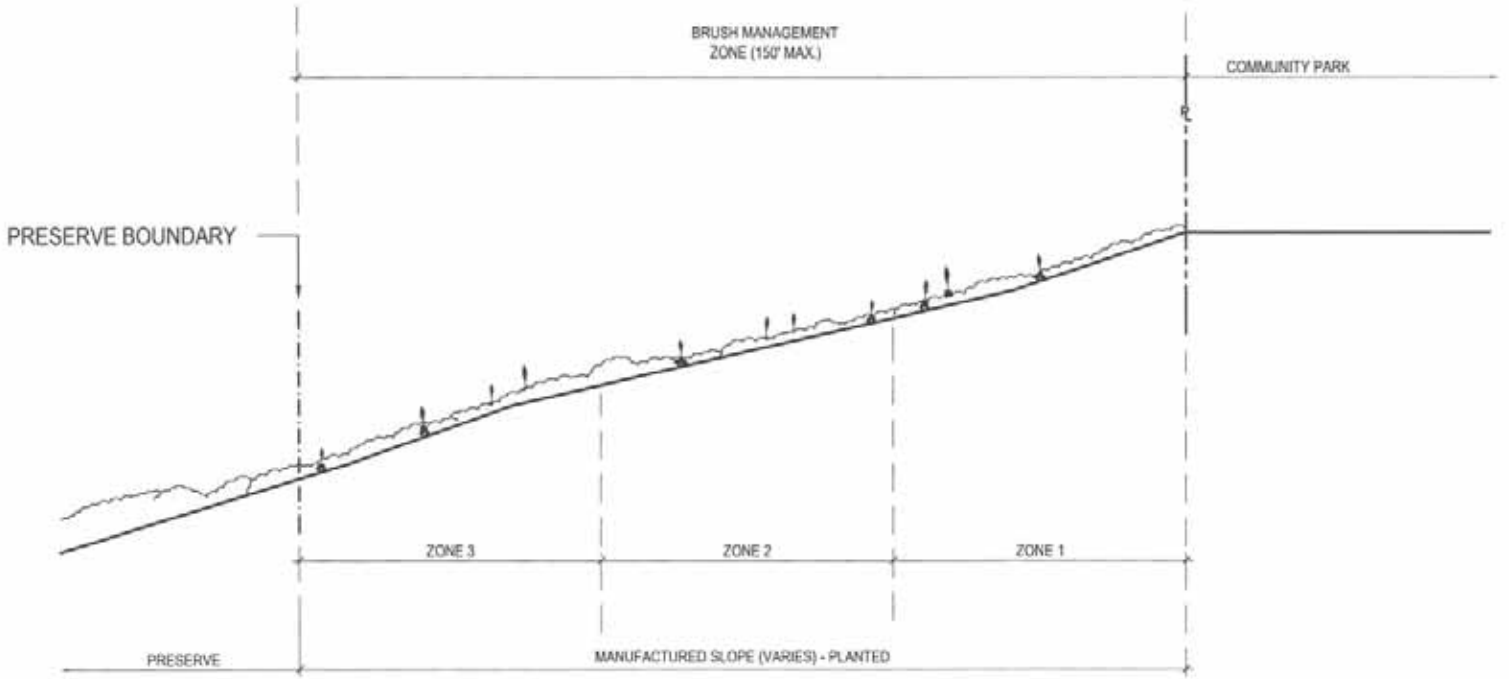
Otay Ranch - Village 3 Industrial Park




Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 3

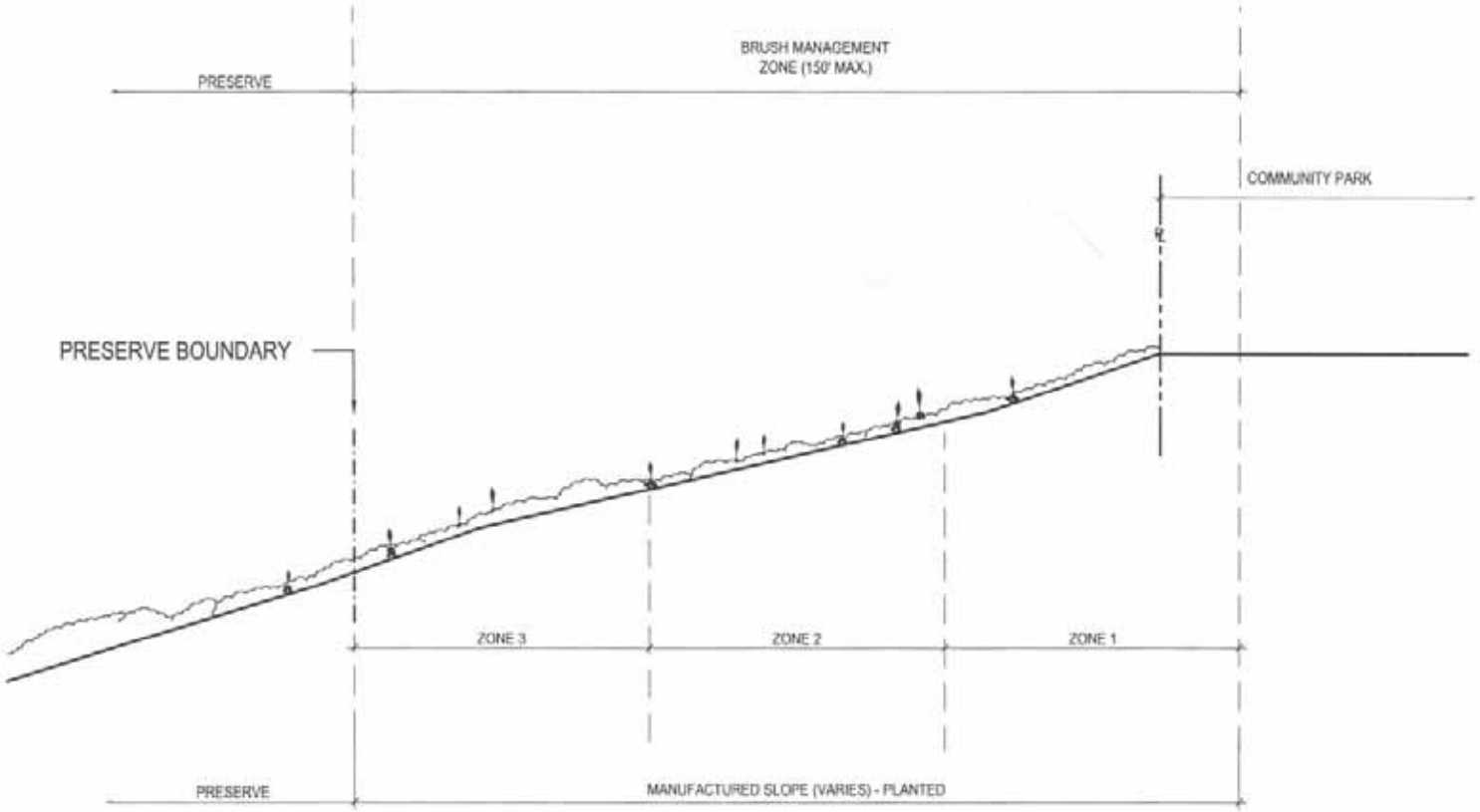
Scale: 1" = 20'

Otay Ranch - Village 3 Industrial




Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 1 Scale: 1" = 20'

Otay Ranch - Village 4 Community Park




Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 2 Scale: 1" = 20'

Otay Ranch - Village 4 Community Park

## B. Fire Protection Planning area "B"; Other Perimeter Slopes

Planting and irrigation requirements for Fire Protection Planning Area "B" are provided below. In addition, all materials listed in the Prohibited Plant List (Appendix A) are prohibited within all three brush management zones. An Approved Plant List for FPPA B is also provided below.

### Zone 1: 0-30'

- Irrigated zone
- No trees
- Plant height: 0-18" (including groundcover and vine masses).
- There shall be no hedges or shrubs

### Zone 2: 31-60'

- Irrigated zone
- Plant height: max 36" (including irrigated shrubs, groundcover and vine masses)
- No trees within 45' horizontally from top of slope.
- Tree spacing: 20' between mature canopies (30' if slope 41%+)
- Trees may be planted in clusters of no more than 3.
- Shrubs may be planted in clusters not exceeding a total of 400 sq ft.
- A distance of no less than the width of the largest shrub's mature spread shall be provided between each shrub cluster.
- Non-shrub avenues shall be included to provide a clear access route from toe of slope to top of slope and shall be a minimum width of 6' and spaced a distance of 200' lineal feet on center.
- When shrubs or other plants are planted underneath trees, the tree canopy shall be maintained at a height no less than three times the shrub or other plant's mature height (break up any fire laddering effect).
- There shall be no hedges.
- Trees must be limbed up 1/3 height of mature trees or 6', whichever is greater

### Zone 3: 61-90'

- Irrigated zone
- Plant height maximum: 36"
- Tree spacing: 20' between mature canopies (30' if slope 41%+)
- Trees may be planted in clusters of no more than 3.
- Shrubs may be planted in clusters not exceeding a total of 400 sq ft.
- A distance of no less than the width of the largest shrub's mature spread shall be provided between each shrub cluster.

- Non-shrub avenues shall be included to provide a clear access route from toe of slope to top of slope and shall be a minimum width of 6' and spaced a distance of 200' lineal feet on center.
- When shrubs or other plants are planted underneath trees, the tree canopy shall be maintained at a height no less than three times the shrub or other plant's mature height (break up any fire laddering effect).
- There shall be no hedges.
- Trees must be limbed up 1/3 height of mature trees or 6', whichever is greater

**Fire Protection Planning Area "B" Approved Plant List**

**Trees**

| *Common Name* | *Scientific Name* |
|---|---|
| London plane tree | *Plantanus acerifolia 'bloodgood'* |
| Australian willow | *Geijera parviflora* |
| Coast live oak | *Quercus agrifolia* |
| African sumac | *Rhus lancea* |
| Brisbane box | *Tristania conlferta* |
| Jacaranda | *Jacaranda mimosifolia* |
| California sycamore | *Platanus racemosa* |
| Chilean mesquite | *Prosopis chilensis* |
| Black willow | *Salix gooddingii* |
| Pink Crape Myrtle | *Lagerstroemia indica 'biloxi'* |
| Cape chestnut | *Calodendrum capense* |
| Golden medallion tree | *Cassia leptophylla* |
| Chitalpa | *Chitalpa tashkentensis* |
| Chinese flame tree | *Koelreuteria bipinnata* |
| Firewheel tree | *Stenocarpus sinualus* |
| Chinese evergreen elm | *Ulmus parvifolia 'Drake'* |
| Bottle tree | *Brachychiton populneus* |
| American sweet gum | *Liquidamber styraciflua 'festival'* |

**Shrubs/Ground cover**

| *Common Name* | *Scientific Name* |
|---|---|
| California meadow sedge | *Carex pansa* |
| Century Plant | *Agave attenuata* |
| Carmel creeper | *Ceeanothus griseus horizontalis* |
| Lavender starflower | *Grewia occidentalis* |
| Dwarf English lavender | *Lavandula angustifolia 'compacta'* |
| <no common name> | *Myoporum 'Pacificum'* |
| <no common name> | *Myoporum parviflorum 'Putah creek'* |
| Indian hawthorn | *Rhaphiolepis indica 'ballerina'* |
| Indian hawthorn | *Rhaphiolepis indica 'majestic beauty'* |
| Wild lilac | *Ceanothus 'Joyce Coulter'* |
| Pink melameuca | *Melaleuca nesophila* |
| Lily of the Nile | *Agapanthus africanus 'blue'* |
| Dwarf flax | *Phormium tenax 'bronze baby* |

| | |
|---|---|
| Dwarf tall fescue | *Marathon III* |
| Toyon | *Heteromeles arbutifolia* |
| White lily of the Nile | *Agapanthus africanus 'rancho white'* |
| Pink powder puff | *Calliandra Haematocephala* |
| Pink day lily | *Hemerocallis hybrid 'pink parfait'* |
| Fortnight lily | *Dietes bicolor* |
| Fortnight lily | *Dietes vegeta* |
| Day lily | *Hemerocallis hybrids* |
| Japanese privet | *Ligustrum japonicum 'texanum'* |
| Flax | *Phormium* spp. |
| Violet trumpet vine | *Clytostoma callistegiodes* |
| <no common name> | *Photinia fraseri* |
| Rosemary (dwarf) | *Rosmarinus officinalis "Huntington Blue"* |
| Prostrate natal plum | *Carissa macrocarpa 'green carpet'* |
| Star jasmine | *Trachelospermum jasminoides* |

**Hydroseed Mix**

| Common Name | Scientific Name |
|---|---|
| Beach evening primrose | *Camissonia cheiranthifolia* |
| Showy evening primrose | *Oenothera speciosa* |
| California poppy | *Eschscholzia californica* |
| Coastal Goldenbush | *Isocoma menziesii* |
| Dwarf Goldfields | *Lasthenia californica* |
| Deerweed | *Lotus scoparius* |
| Purple needlegrass | *Nassella pulchra* |
| Western ragweed | *Ambrosia psilostachya* |
| Mugwort | *Artemisia douglasiana* |
| Mulefat | *Baccharis salicifolia* |
| Poverty weed | *Iva hayesiana* |
| Sprangletop | *Leptochloa uninervia* |
| Blue-eyed grass | *Sisyrinchium bellum* |
| Sticky monkeyflower | *Mimulus aurantiacus puniceus* |
| California blue bells | *Phacelia campanularia* |

Exhibits 7 and 8 depict conditions along the major arterial roadways.

La Media Road Brush Management Section

Olympic Parkway, Brush Management Section

## 8. OTHER BRUSH MANAGEMENT

Consideration should be given to ensure slope stability and prevent erosion when determining plant palettes and maintenance programs for these areas.

### A. Roadside Brush Management Zones

- Roadside Brush Modification Zones shall be cleared of any flammable vegetation including flammable shrubs and trees.
- No unbroken canopies.
- Grass shall be mowed to 4".
- Single specimens of trees, fire resistive shrubs, or cultivated ground cover such as green grass, succulents or similar plants used as ground covers may be used, provided they do not form a means of readily transmitting fire.
- All roads in the development will have vegetation clearance of flammable vegetation on each side.

Trees may be placed within the Roadside Brush Management Zones in areas where public streets are included in the Brush Management Zone, such as La Media Road on the perimeter of the project area and Paterna Drive, located along the Wolf Canyon edge. The following criteria must be followed:

- Tree spacing to be 20' between mature canopies (30' if adjacent to a slope steeper than 41%
- Trees must be limbed up 1/3 height of mature trees or 6', whichever is greater
- No tree canopies lower than 13'6" over roadways
- No trees shall be planted that are listed on the Prohibited Plan List (Appendix A)
- No flammable understory is permitted beneath trees
- No tree limbs/branches are permitted within 10' of a structure.

### B. Trail Brush Management

- A 10' Brush Modification zone is required on both sides of hiking trails.
- Fire resistive vegetation should be utilized, unless existing natural vegetation needed for soil and slope stability and to prevent erosion.
- Grasses must be kept mowed to 4" or less.
- Certain trees may be planted if they are not prohibited in this plan. Approved trees include Coastal Live Oak, Engelmann Oak, and Sycamore.
- Trees, within Brush Management Zones, must be properly spaced and limbed up with no flammable under story.

## C. Parks, open space, etc.

Fire Safe Brush Management is recommended within parks and open space areas, but only required by City in the Brush Management Zones shown on Landscape Architect's drawings in the Appendices E and F of this plan.

- Flammable vegetation must be removed.
- Grasses kept mowed to 4".
- Types and spacing of trees, plants and shrubs, to comply with the same criteria as Fire Protection Planning Area "B" criteria.
- Plant materials included in the Prohibited Plant List (Appendix A) are prohibited in this area.
- Areas shall be maintained free of down and dead vegetation.
- Flammable vegetation and flammable trees shall be removed and prohibited.
- Trees to be properly limbed and spaced and shall not be of a type prohibited in this plan.

## D. Vacant Parcels and lots

- Lots that are vacant will not be required to have brush management until construction begins.
- Prior to issuance of a building permit for construction, grading, digging, installation of fences, or other construction, the outermost 30' of the parcel is to be maintained as a Brush Management Zone per the CVFD Fire Code.
- Flammable vegetation shall be reduced by 60% in this zone.
- Dead fuel, ladder fuel (fuel which can spread fire from ground to trees), and downed fuels shall be removed and trees/shrubs shall be properly limbed, pruned and spaced per this plan.
- The remainder of the Brush Management Zones required for the particular parcel shall be installed and maintained prior to flammable material being brought to any lot under construction.

## E. Environmentally sensitive areas/Riparian areas

In any environmentally sensitive areas that contain sensitive habitat, cultural sites, riparian areas, biological buffer areas, MSCP Preserve areas, debris basins etc, permission will be needed from the City of Chula Vista, and the appropriate resource agencies (California Department of Fish and Game, U.S. Fish and Wildlife Service, Army Corps of Engineers) prior to any brush management activities. This project is directly adjacent to Wolf Canyon, a part of the MSCP Preserve. Therefore any proposed brush management activities within FPPA "A", Zone 3, must adhere to the requirements outlined in the MSCP Subarea Plan.

### F. Alternative Methods

The developer, or private lot owner may submit a site specific risk assessment and detailed brush management plan, to the CVFD, proposing alternative methods of fire protection and providing justification for less than the recommended brush management zones, if there is a practical difficulty, or environmental constraint, in providing the entire size of the necessary brush management zone.

### G. Private Lots

Per the Fire Marshal, the Brush Management Zones apply to the perimeter slopes described above and do not apply to private lots. However, the Fire Protection Consultant has provided recommendations, in Appendix D, for private property owners (including all types of occupancies) within the project area regarding how to select fire safe vegetation and how to plant and maintain the vegetation on their lots in a fire safe manner. Recommendations for construction of decks, and other ancillary structures, on perimeter lots facing perimeter Brush Management Zones are also included. In addition, it is recommended that none of the plant materials listed in the "Prohibited Plant List" (Appendix A) in this plan be planted on private lots. Developer will provide that list to all buyers in a private property owners' guide to fire safe brush management on private lots. Private lot owners located adjacent to the Chula Vista MSCP Preserve are prohibited from conducting any brush management activities outside their private property.

## 9. UNDESIRABLE PLANTS

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical.

The plants included in the Prohibited Plant List (Appendix A) are unacceptable from a fire safety standpoint, and should not be planted in any slopes, brush management zones, open space, including perimeter open space around this tract (all sides), private lot brush management zones, or on the perimeter streets in the tract. An exception may be granted by the Fire Marshal for the open space slopes within FPPA "B" along roads where there is no UWI threat. For example, in those areas, Torrey Pines can be used if irrigated and spaced 40' between canopies. Silver Dollar Eucalyptus or Eucalyptus Citriodora (Lemon Scented Gum) may be used if it is irrigated and spaced 20' between canopies.

The Prohibited Plant List (Appendix A) was prepared in cooperation with licensed Landscape Architects and has previously been reviewed and approved by the Fire Protection Consultant and the Chula Vista Fire Marshal.

## 10. ANNUAL AND ONGOING BRUSH MANAGEMENT

An Open Space Maintenance District ("OSD) and Community Facilities District ("CFD"), will implement ongoing maintenance of designated common areas (not

otherwise maintained by a Homeowners Association entity), roadsides, Brush Management Zones, retention basins, open space, streetscapes, medians, planters, etc., within Fire Protection Planning Areas A and B in compliance with this plan and City requirements. Consideration must be given to ensuring slope stability and preventing erosion through appropriate maintenance activities.

## 11. CONSTRUCTION PHASE BRUSH MANAGEMENT

Brush management in all common areas, medians, planters, roadsides, parks, etc shall be done as required in this plan at the start of, and throughout the construction phase. Brush management shall be done on private lots prior to work beginning on those lots and prior to any combustible construction materials being brought on site. Adequate fuel breaks shall be created around all grading, site work and other construction activities in areas where there is flammable vegetation.

## 12. ACCESS ROADS AND FIREFIGHTER WALKWAYS

It is understood that all streets and alleys will comply with all current requirements of the City of Chula Vista City Council and all City departments, including the Fire Department. In addition, the CVFD, Planning Dept. and Engineering Dept. review/approve all site plans for Multi-family neighborhoods and the project is taken to Design Review Committee as well. All roads shall meet City and Fire Department standards as approved for the Otay Ranch. Access roads, not including alleys, will comply with Chula Vista Fire Department Fire Code Section 902.2. In addition, there are 20' wide (drivable width) alleys between various homes throughout the project. Alleys will be posted "No Parking-Fire Lane."

All addressing of structures and roads shall meet City standards and be approved by Fire Department.

Firefighter foot access to the Wolf Canyon area will be provided at the ends of cul-de-sacs at Ortega Street, Oramus Court, Dome Rock Place, Copper Creek Court, La Cumbre Avenue and Cota Court and along Paterna Drive where it is a single-loaded residential street along the Wolf Canyon edge. Direct firefighter access will also be provided at the southern edge of the Community Purpose Facility (CPF-3) site located along the Wolf Canyon Edge. The exact location of access gates for firefighter foot access will be provided on the Village 2 Landscape Master Plan. Locking mechanisms on access gates shall be subject to review and approval by the Fire Marshal. Alternative firefighter foot access may be proposed, but is subject to approval by the City's Fire Marshal.

## 13. WATER SUPPLY AND FIRE FLOW

Wherever possible, approved emergency fire truck access will be provided to within 50' of any community swimming pools. A drafting hydrant shall be provided at these locations, and will be connected to the drain system.

Fire hydrants:

- This development will be served by an extension of the Otay Municipal Water District water distribution system and will have mains, hydrants, and stored water. Fire flows have already been addressed in the SPA plan, Water Master Plan and Otay Water District Sub-area Master Plan and have been approved by the City and/or Otay Water District as being adequate to serve the project area.

- The minimum required fire flow will be 1500 GPM for 2 hours at least 20 PSI, and shall provide pressures required to supply hydrants and fire sprinklers during periods of maximum peak domestic demand.

- Pressure demands for fire sprinklers will be higher.

- Fire flow demands for commercial and industrial occupancies, schools or multi family residences may be higher, based on type of construction and size, per Fire Code Table A-111-A-1.

- The fire flow is based upon all new Type 5 NR structures being less than 3,600 sq ft, or being equipped with fire sprinklers, per Table A-111-A-1.

- Fire hydrants shall be of an approved type and have one 4" outlet and one 2.5" outlet, unless otherwise specified by Fire Chief. Fire hydrants will have a 3' by 3' gravel (for dry barrel hydrant) or concrete pad at base for weed control. Reflective blue dot hydrant markers will be located in the center of the road to indicate location of a hydrant.

Hydrant spacing:

Fire hydrants in residential areas shall be located at 500' spacing; beginning at the intersection of each residential street with homes fronting. It is recommended that hydrants be on the right (driving) side of the street. A hydrant should be located at each intersection and at each entrance to cul-de-sac bulb

- Hydrants shall be installed to provide alley coverage. The exact spacing shall be 600 feet on center. The Otay Water District shall be consulted in order to provide adequate maintenance access to hydrants serving alleys.

- Hydrants on roads where there are no structures will be 1,000' apart, and will be alternated on each side of street.

- Hydrants in any commercial or industrial area, including multi family complexes, and high density residential, shall have 300' on center spacing.

- Each fire hydrant shall have a red curbed area posed "No Parking – Fire Lane" for fire engines to pull out of traffic to connect to fire hydrants.

- Multi family developments or schools may require an on site hydrant, if the distance from a hydrant on the public street exceeds 150'.

- Actual placement of hydrants shall be subject to approval of the Fire Department.

- Hydrants shall be provided at the ends of cul-de-sacs and other points along the Wolf Canyon edge in locations where firefighter foot access is provided.

- Horizontal dry standpipes with a 2.5" diameter gated fire hose outlet, which can flow 250 GPM, will also be provided on the Wolf Canyon side of homes abutting the canyon. They shall be spaced at approximately 1,000' intervals as measured starting at the fire hydrants at the locations where firefighter foot access is provided (see Section 12 above). Fire Department pumper connections shall be located at the closest fire hydrant, in order to allow the Fire Department to pump water into these lines. The actual design and location of the standpipes shall be shown on the Village 2 Landscape & Irrigation Plans and shall be subject to approval of the Fire Marshal.

## 14. FIRE PROTECTION SYSTEMS AND EQUIPMENT

*Explanatory Note: All fire extinguishing systems shall be installed per Chula Vista Fire Department requirements and NFPA standards.*

- All structures of any type exceeding 3,600 sq ft, three story residences, multi family dwellings or condominium complexes over 5 units, or 3 stories high, and schools, commercial and industrial buildings, shall be equipped with fire sprinkler systems. The State Fire Code Section 1003.2.2 requires that all structures (except for F-2 occupancies and open parking garages) with 30 or more occupants on any floor 55' or more from lowest level of fire truck access, schools, and any structure beyond 150' from an approved access road, be equipped with internal Fire Sprinklers. Sprinkler systems shall meet the appropriate NFPA sprinkler standard for the type of occupancy. Single-family dwellings will be 13-D systems.

- Any structures of any occupancy type and size (greater than 200 sq ft) on the perimeter abutting Wolf Canyon shall have fire sprinklers, due to the fire risk and the potential for increased fuel load in the open spaces in future years.

- Multi family residential buildings shall be equipped with NFPA 13-R or 13 sprinkler systems pursuant to CVFD requirements.

- All non-residential occupancies shall be equipped with NFPA 13 sprinkler systems.

- The fire sprinklers shall be designed with coverage to include garages, enclosed porches and enclosed patios, subject to CVFD approval. . Sprinkler coverage should be considered for attics to extinguish burning embers, which can enter through vents.

- Fire Sprinklers in small, uninhabitable, detached, structures may be excluded by the Fire Chief based on type of construction and distance from other buildings.

- The water supply shall be per the appropriate NFPA sprinkler standard and the CVFD requirements based on the type of occupancy.

- Sprinkler systems in all buildings other than single family dwellings shall be electronically supervised to an approved 24 hour answering point, where a trained person is present who can verify alarm and call 911.

- Sprinkler systems for buildings other than detached single-family dwellings shall have a fire department connection at the street in front of the building, and a fire hydrant within 25' of the fire department connection.

- All residential units shall have smoke detectors as required by the Building Code.

- Fire Alarm systems shall be as required by the City Fire Code for apartment houses 3 or more stories in height or containing 16 or more dwelling units (unless sprinklered OR unless not over 2 stories in height with all units separated by 1 hour walls and if each unit has an exit directly to outside).

## 15. IGNITION RESISTANT CONSTRUCTION REQUIREMENTS FOR STRUCTURES

In addition to City of Chula Vista requirements, the following construction requirement shall be implemented in Village 2. Detailed architectural and construction plans addressing these requirements are subject to review and approval by the Director of Planning and Building.

### A. ALL STRUCTURES THROUGHOUT THE PROJECT

- Structures over 3,600 sq ft, shall have residential fire sprinklers due to capabilities of first alarm fire forces, and in order to allow fire flow of 1500 GPM, per Fire Code Appendix 111-A. Any three story residences shall be equipped with an NFPA 13-D system with 4 head calc.

- All roofs shall be approved Class A assemblies and subject to approval of the Assistant Director of Building Housing and Fire Marshal. The end of any Spanish tile roofs shall be blocked to prevent bird's nests. Any roofs with a profile which

allows a gap between roof covering and roof deck shall be fire stopped at the ends. All roof edges and valleys shall be constructed so there are no gaps.

- Vents shall have louvers over them, and shall be covered with a maximum ¼" mesh per code. Vent openings shall not exceed 144 sq" each, and shall be designed to prevent intrusion of sparks and burning debris

- Glazing on all structures shall be double pane. All skylights shall be tempered.

- All exterior walls on any structure of any kind anywhere in this tract shall be approved stucco or non-combustible Hardy type Board. No combustible wall coverings, light flammable wood shall be permitted. Walls shall comply with Chula Vista Fire and Building Codes.

- Approved spark arrestors shall be provided on all chimneys, stovepipes and flues. Arrestors shall be visible from grade.

**B. <u>STRUCTURES OF ANY TYPE OCCUPANCY AND SIZE ON PERIMETER ABUTTING WOLF CANYON</u>**

1. Fire Sprinklers shall be designed and installed per the appropriate NFPA sprinkler standard and CVFD standards. Residential Protection shall include enclosed porches and garages.

2. All roofs shall be approved Class A assemblies and subject to approval of the Assistant Director of Building Housing and Fire Marshal. The end of any Spanish tile roofs shall be blocked to prevent bird's nests. Any roof where the profile allows a gap between the roof covering and roof deck shall have the ends fire stopped. All roof edges and valleys shall be constructed so there are no gaps.

3. Eaves on perimeter structures shall be boxed in and be of 1 hour fire resistive construction, or non-existent. Fascias are needed and are to be protected on backside by 1 hour rated construction or 2" nominal dimension lumber. No vent openings in eaves, eave overhangs, soffits, rakes, between rafters at eaves, or in other overhang areas

4. Glazing facing Wolf Canyon, on perimeter structures, shall be tempered double pane or tempered. Skylights shall be tempered.

5. Plastic or vinyl window frames shall comply with the following:

    - Frame and sash are comprised of vinyl materials with welded corners
    - Metal reinforcements in the interlock area

- Glazed with insulated glass or tempered
- Frame and sash profiles are certified in AAMA lineal certification program (verified with either an AAMA product label or certified products directory)
- Certified and labeled in accordance with ANSI or other approved agency standard.
- Comply with ANSI/AAMA/NWWDA 101/I.S 2-97 structural requirements, as required by County Fire Code.

6. Exterior walls on perimeter structures shall be either one-hour rated stucco assembly or other approved one-hour rated walls on exterior side. No combustible wall coverings. No wood. Walls to comply with Chula Vista Fire and Building Codes. No wood or plastic garage doors.

7. Vents shall have louvers over them, and be covered with a maximum ¼" mesh per code. Vent openings shall not exceed 144 sq" each type and designed to prevent intrusion of sparks and burning debris. No vents in soffits, eave overhangs, rakes, between rafters at eaves, or in other overhang areas. No vents should face Wolf Canyon. No turbine vents. Vents shall be subject to approval of the Building Official and the Fire Chief.

8. No paper or plastic faced insulation in ventilated spaces.

9. Gutters and downspouts shall be non combustible, and shall be designed to reduce accumulation of litter and debris that contribute to roof edge ignition

10. Exposed piping, except plumbing vents, shall be non combustible

11. Decks, balconies, carports, patio covers, gazebos, and similar architectural appendage and ancillary structures shall not overhang slopes and shall be 1 hour rated heavy timber or approved non-combustible, and not made of a material which could ignite, melt or otherwise fail during a fire, or fail under the weight of a firefighter during a fire. The underside shall be enclosed on all sides. Deck or patio cover components attached to any structure shall not increase the risk of fire spread to the structure, and shall maintain the fire resistive integrity of the wall.

12. Structures shall be set back 30' from edge of slope, wherever possible.

13. Fences on perimeter lots shall not be wood, and Property line fencing shall be solid block, solid masonry or solid steel. Heavy timber split rail, or heavy timber, fences may be used outside of the fuel modification zones,

and away from slopes above Wolf Canyon. No fencing or railings shall be plastic or vinyl.

14. Rear yard fencing on lots backing or siding on Wolf Canyon shall be 6' solid (combination 2' masonry block with 4' fire rated glass about). Open metal fencing is acceptable in perimeter areas where a single-loaded residential street is incorporated into the Brush Management Zone.

15. Wherever possible, structures shall have approved garden hose connections on all sides of structures. Connection to have 50' of garden hose and a spray nozzle attached. A metal Sign to be permanently posted on the wall above faucet: " Fire hose; do not remove."

16. Approved spark arrestors on chimneys and flues shall be visible from grade.

17. No firewood, lumber, or LPG tanks shall be stored within 30' of structure

## 16. SUMMARY

This plan is limited to addressing the requirements of the Chula Vista Fire Marshal for this project.

All buyers of structures which could be exposed to spotting from Wolf Canyon should receive notice of the possible fire hazard threat from Wolf Canyon in Village 2, and should be given a copy of this report. This development will comply with all applicable requirements of the City of Chula Vista.

As Fire is dynamic and unpredictable, this plan does not guarantee that a fire won't occur or won't cause property damage, injury or loss of life. No expressed or implied warranties are made as to the adequacy or effectiveness of the recommendations and requirements in this plan in all situations.

Architecture, landscape architecture, and engineering are out of the scope of this plan. All detailed plans for architecture, landscaping, and engineering, and all plant palettes, shall be in compliance with the concepts in this plan and shall be submitted to the Fire Marshal for review and approval. In the event there is a practical difficulty, legal environmental constraint or other legal constraints, or engineering/architectural difficulties in complying with this plan, alternative methods of compliance may be submitted to the Fire Marshal for review and approval in compliance with the spirit and intent of this Conceptual Fire Protection Plan

APPENDIX:

A Prohibited Plant List
B Photos of site
C BEHAVE fire spread models
D Recommendations for Brush Management and decks on Private Lots
E Village 2 and 4 Brush Management Zones Exhibit

**APPENDIX A**
## Prohibited Plant List

# Trees

| Botanical Name | Common Name | Resource |
|---|---|---|
| Abies species | Fir Trees | S |
| Acacia species | Acacia | HS |
| Agonis juniperina | Juniper Myrtle | S |
| Araucaria species | Norfolk Island Pine | S |
| Callistemon species | Bottlebrush | H |
| Cedrus species | Cedar | HS |
| Chamaecyparis species | False Cypress | S |
| Cinnamomum camphora | Camphor Tree | H |
| Conifers | | H |
| Cryptomeria japonica | Japanese Cryptomeria | S |
| Cupressocyparis leylandii | Leylandii Cypress | S |
| Cupressus forbesii | Tecate Cypress | S |
| Cupressus glabra | Arizona Cypress | S |
| Cupressus sempervirens | Italian Cypress | S |
| Cupressus species | Cypress | H |
| Eucalyptus species | Eucalyptus | HS |
| Eucalyptus | Eucalyptus Species | K |
| Juniperus species | Juniper | H |
| Larix species | Larch | S |
| Olea europea | Olive Tree | H |
| Palmae species | Palms | HS |
| Parkinsonia aculeata | Mexican Palo Verde | K |
| Pinus species | Pine | HS |
| Pittosporum undulatum | Victorian Box | K |
| Podocarpus species | Fern Pine | S |
| Prunus caroliniana | Carolina Cherry Laurel | K |
| Prunus lyonil | Catalina Cherry | K |
| Pseudotsuga menziesii | Douglas Fir | S |
| Quercus engelmannii | Engelmann Oak | K |
| Quercus suber | Cork Oak | K |
| Schinus molle | California Pepper Tree | H |
| Tamarix species | Tamarix | C |
| Taxodium species | Cypress | S |
| Taxus species | Yew | S |
| Tsuga species | Hemlock | S |
| Washingtonia filifera | California Fan Palm | H |

# Groundcovers, Shrubs & Vines

| Botanical Name | Common Name | Resource |
|---|---|---|
| Acacia species | Acacia | HS |
| Achillia millefolium | Common Yarrow | K |
| Adenostoma fasciculatum | Chamise | HS |
| Adenostoma sparsifolium | Red Shanks | HS |
| Aconium decorum | Aconium | K |
| Aconium simsii | ncn | K |
| Ajuga reptans | Carpet Bugle | K |
| Anthemix cotula | Mayweed | H |
| Aptenia cordifolla x 'Red Apple' | Red Apple | K |
| Arbutus menziesii | Madrone | H |
| Arctostaphylos species | Manzanita | H |
| Artemisia pycnocephala | Beach Sagewort | K |
| Artemisia californica | California Sagebush | HS |
| Artemisia caucasica | Caucasica Artemisia | H |
| Artemisia pycnocephala | Sandhill Sage | H |
| Artemisia species | | H |
| Arundo donax | Giant Cane | C |
| Atriplex species | Saltbush | H |
| Atriplex canescens | Four-Wing Saltbush | K |
| Atriplex lentiformis ssp. Breweri | Brewer Saltbush | K |
| Baccharis pilularis consanguinea | Chapparral Bloom | H |
| Baccharis pilularis var. pilularis | Twin Peaks | K |
| Baccharis species | Coyote Bush | H |
| Bambusa species | Bamboo | S |
| Bougainvillea species | Bougainvillea | H |
| Brassica nigra | Black Mustard | H |
| Brassica rapa | Yellow Mustard | H |
| Cardaria draba | Hoary Cress, Perennial Peppergrass | H |
| Carpobrotus species | Ice Plant, Hottentot Fig | H |
| Carpobrotus chilensis | Sea Fig Ice Plant | K |
| Chrysanthemum leucanthemum | Oxeye Daisy | K |
| Cirsium vulgare | Wild Artichoke | H |
| Conyza canadensis | Horseweed | H |
| Coprosma pumila | Prostrate Coprosma | S |
| Cortaderia selloana | Pampas Grass | HC |
| Crassula Lactea | ncn | K |
| Crassula multicava | ncn | K |
| Crassula ovata | Jade Tree | K |
| Crassula tetrangona | ncn | K |
| Cytisus Spp. | Scotch Broom, French Broom, etc. | HC |
| Delosperma 'alba' | White Trailing Ice Plant | K |

| | | |
|---|---|---|
| Dodonea viscosa | Hopseed Bush | S |
| Drosanthemum floribundum | Rosea Ice Plant | K |
| Drosanthemum hispidum | ncn | K |
| Drosanthemum speciosum | Dewflower | K |
| Eriogonum fasciculatum | Common Buckwheat | H |
| Eriogonum species | Common Buckwheat | HS |
| Eschscholzia Mexicana | Mexican Poppy | K |
| Fremontodendron species | Flannel Bush | H |
| Gaillardia x grandiflora | Blanketflower | K |
| Gazania hybrids | South African Daisy | K |
| Gaxania rigens leucolaena | Trailing Gazaniz | K |
| Hedera helix | English Ivy | H |
| Helix canariensis | English Ivy | K |
| Heterotheca grandiflora | Telegraph Plant | HS |
| Hypericum calycinum | Aaron's Beard | K |
| Juniperus species | Juniper | S |
| Lactuca serriola | Prickly Lettuce | H |
| Lampranthus aurantiacus | Bush Ice Plant | K |
| Lampranthus filicaulis | Redondo Creeper | K |
| Lampranthus spectabilis | Trailing Ice Plant | K |
| Limonium pectinatum | ncn | K |
| Limonium perezii | Sea Lavendar | K |
| Lonicera japonica | Japanese Honeysuckle | S |
| Lonicera japonica 'Halliana' | Hall's Japanese Honeysuckle | K |
| Lotus coniculatus | Bird's Foot Trefoil | K |
| Mahonia species | Mahonia | H |
| Malephora lutcola | Trailing Ice Plant | K |
| Miscanthus species | Eulalie Grass | S |
| Muehlenbergia species | Deer Grass | S |
| Nerium oleander | Oleander | K |
| Nicotania bigelovii | Indian Tobacco | H |
| Nicotania glauca | Tree Tobacco | H |
| Ophiopogon japonicus | Mondo Grass | K |
| Osteospermum fruticosum | Trailing African Daisy | K |
| Penstemon spectabilis | Beard Tongue | K |
| Pennisetum setaceum | Fountain Grass | C |
| Perronskia Atriplicifloria | Russian Sage | H |
| Pickeringia 'Montana' | Chaparral Pea | S |
| Plantago sempervirens | Evergreen Plantain | K |
| Portulacaria afra | Elephant's Food | K |
| Potentilla tabernaemontanii | Spring Cinquefoil | K |
| Rhamnus Alaternus | Italian Buckhorn | K |
| Rhus Diversiloba | Poison Oak (worker/firefighter safety) | H |
| Rhus laurina | Laurel Sumac | H |
| Rhus Lentii | Pink Flowering Sumac | H |

| | | |
|---|---|---|
| Ricinus communis | Castor Bean | H |
| Romneya coulteri 'white cloud' | White Cloud Matilija Poppy | K |
| Rosmarinus species[1] | Rosemary | S |
| Salsola australis | Russian Thistle | H |
| Salvia mellifera | Black Sage | S |
| Salvia species | Sage | H |
| Sedum acre | Goldmoss Sedum | K |
| Sedum album | Green Stonecrop | K |
| Sedum confusum | ncn | K |
| Sedum ilineare | ncn | K |
| Sedum x rubrotinctum | Pork and Beans | K |
| Senecio serpens | ncn | K |
| Solanum xantii | Purple Nightshade (toxic) | H |
| Silybum marianum | Milk Thistle | H |
| Tamarix Spp. | Tamarisk | K |
| Tecomaria capensis | Cape Honeysuckle | K |
| Thuja species | Arborvitae | S |
| Trifolium hirtum 'Hyron' | Hyron Rose Clover | K |
| Trifolium fragiferum 'O'Connor's' | O'Connor's Legume | K |
| Urtica urens | Burning Nettle | S |
| Verbena species | Verbena | K |
| Vinca major | Periwinkle | H |
| Vinca minor | Dwarf Periwinkle | K |
| Vulpia myuros 'Zorro' | Zorro Annual Fescut | K |
| Yucca species | Yucca | K |

**Exceptions**

1. The use of palm trees is prohibited within any Brush Management Zones, however Palm trees may be permitted within the development (in moderation), with prior approval from the City of Chula Vista Fire Department. Proper spacing, irrigation and maintenance required.

2. Bougainvillea species may be used within the FPPA "B" Brush Management Zones, (in very moderate amounts), with prior approval from the City of Chula Vista Fire Department.

[1] Rosemariuns species (dwarf) is acceptable for use within this project area.

**Notes**

1. Various documents are referenced as sources for plant material information in this list of prohibited plant material. The titles of some of those reference documents suggest that some of the plant materials may be somewhat "Fire Retardant." It must be understood that under various fire conditions, all plant materials will burn. Accordingly, some seemingly "Fire Retardant" plants appear in this Prohibited Plant List.

2. Some plants included in the Prohibited Plant List are documented elsewhere in publications as "Fire Resistant." Others are documented as "High Fire Risk." Notwithstanding any other descriptors, the preparers of this document have determined that plants in this Prohibited Plant List shall not be used within the Brush Management Zones within this project.

3. All vegetation used in Brush Management Zones and elsewhere in this development shall be subject to approval of the Fire Marshal. For those areas adjacent to the Chula Vista MSCP Preserve, specifically Wolf Canyon, all vegetation used in Brush Management Zones shall also be subject to the approval of the Director of Planning and Building.

**Sources**

**C** **City of Chula Vista**
**Fire Retardant and/or Drought Tolerant Plant List**
Landscape Manual, November 1994

**H** **Hunt Research Corporation Report**
**Otay Ranch, Village 7 - Fire Protection Plan**
Dated: June 14, 2005

**S** **County of San Diego**
**Suggested Plant List for Defensible Space**
http://www.sdcounty.ca.gov/dplu/dos/UndesirablePlants.pdf

**K** **Appendix K, City of Chula Vista MSCP Subarea Plan: San Diego County Fire Chief's Association Fuel Modification Zone Plant List**
Dated: July 15, 1997

Any deviations from the Prohibited Plant List must be submitted to the Fire Marshal for approval.

*8-9-05 Draft Conceptual Fire Protection Plan; Otay Ranch Villages 2 and 3, by Hunt Research Corporation*

**Top photo: Wolf Canyon as viewed from Village 7**
**Bottom photo: Road running through Wolf Canyon**

*8-9-05 Draft Conceptual Fire Protection Plan; Otay Ranch Villages 2 and 3, by Hunt Research Corporation*

**Top and bottom photos: vegetation on sides of Wolf Canyon**

**Vegetation on the side of Wolf Canyon**

Modules: SURFACE, SPOT, IGNITE

Description: Wolf -summer fire

## Fuel/Vegetation

| | | |
|---|---|---|
| Fuel Model | | 1 |
| Mean Cover Height | ft | 1 |

## Fuel Moisture

| | | |
|---|---|---|
| 1-h Moisture | % | 3 |
| 10-h Moisture | % | |
| 100-h Moisture | % | |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | |

## Weather

| | | |
|---|---|---|
| 20-ft Wind Speed (upslope) | mi/h | 15 |
| Wind Adjustment Factor | | 0.3 |
| Air Temperature | oF | 90 |

## Terrain

| | | |
|---|---|---|
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 146 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |
| Fuel Shading from the Sun | % | 0 |

## Run Options

Wind direction is upslope.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

## Output Variables

Rate of Spread (maximum) (ch/h)

Flame Length (ft)

(continued on next page)

# Wolf-summer fire

| | | |
|---|---|---|
| Rate of Spread (maximum) | 127.0 | ch/h |
| Flame Length | 5.6 | ft |
| Midflame Wind Speed (upslope) | 4.5 | mi/h |
| Maximum Wind Exceeded? | No | |
| Spotting Distance from a Wind Driven Surface Fire | 0.3 | mi |
| Probability of Ignition from a Firebrand | 91 | % |

1.6 MPH

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Wolf-summer fire |
| **Fuel/Vegetation** | | |
| Fuel Model | | SCAL18 |
| Mean Cover Height | ft | 4 |
| **Fuel Moisture** | | |
| 1-h Moisture | % | 3 |
| 10-h Moisture | % | 4 |
| 100-h Moisture | % | 5 |
| Live Herbaceous Moisture | % | 70 |
| Live Woody Moisture | % | 70 |
| **Weather** | | |
| 20-ft Wind Speed (upslope) | mi/h | 15 |
| Wind Adjustment Factor | | 0.3 |
| Air Temperature | oF | 90 |
| **Terrain** | | |
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 146 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |
| Fuel Shading from the Sun | % | 0 |

## Run Options

Wind direction is upslope.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

## Output Variables

Rate of Spread (maximum) (ch/h)

Flame Length (ft)

(continued on next page)

# Wolf-summer fire

| | | | |
|---|---|---|---|
| Rate of Spread (maximum) | 47.5 | ch/h | 0.6 mph |
| Flame Length | 19.2 | ft | |
| Midflame Wind Speed (upslope) | 4.5 | mi/h | |
| Maximum Wind Exceeded? | No | | |
| Spotting Distance from a Wind Driven Surface Fire | 0.6 | mi | |
| Probability of Ignition from a Firebrand | 91 | % | |

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Wolf-summer fire |
| **Fuel/Vegetation** | | |
| Fuel Model | | 3 |
| Mean Cover Height | ft | 3 |
| **Fuel Moisture** | | |
| 1-h Moisture | % | 3 |
| 10-h Moisture | % | |
| 100-h Moisture | % | |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | |
| **Weather** | | |
| 20-ft Wind Speed (upslope) | mi/h | 15 |
| Wind Adjustment Factor | | 0.3 |
| Air Temperature | oF | 90 |
| **Terrain** | | |
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 146 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |
| Fuel Shading from the Sun | % | 0 |

## Run Options

Wind direction is upslope.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

## Output Variables

Rate of Spread (maximum) (ch/h)

Flame Length (ft)

(continued on next page)

# Wolf-summer fire

| | | |
|---|---|---|
| Rate of Spread (maximum) | 169.6 | ch/h |
| Flame Length | 17.3 | ft |
| Midflame Wind Speed (upslope) | 4.5 | mi/h |
| Maximum Wind Exceeded? | No | |
| Spotting Distance from a Wind Driven Surface Fire | 0.6 | mi |
| Probability of Ignition from a Firebrand | 91 | % |

2 mph

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village 2 summer sh7 |
| **Fuel/Vegetation, Surface/Understory** | | |
| Fuel Model | | sh7 |
| **Fuel/Vegetation, Overstory** | | |
| Canopy Height | ft | 6 |
| **Fuel Moisture** | | |
| 1-h Moisture | % | 3 |
| 10-h Moisture | % | 3 |
| 100-h Moisture | % | 5 |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | 70 |
| **Weather** | | |
| 20-ft Wind Speed (upslope) | mi/h | 40 |
| Wind Adjustment Factor | | 0.5 |
| Air Temperature | oF | 90 |
| Fuel Shading from the Sun | % | 0 |
| **Terrain** | | |
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 200 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

# Village2 summer sh7

| | | |
|---|---|---|
| Surface Rate of Spread (maximum) | 273.1 | ch/h |
| Flame Length | 34.7 | ft |
| Midflame Wind Speed (upslope) | 20.0 | mi/h |
| Max Eff Wind Exceeded? | No | |
| Spot Dist from Wind Driven Surface Fire | 1.8 | mi |
| Probability of Ignition from a Firebrand | 89 | % |

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village2 summer FM 4 |
| **Fuel/Vegetation, Surface/Understory** | | |
| Fuel Model | | 4 |
| **Fuel/Vegetation, Overstory** | | |
| Canopy Height | ft | 6 |
| **Fuel Moisture** | | |
| 1-h Moisture | % | 3 |
| 10-h Moisture | % | 4 |
| 100-h Moisture | % | 5 |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | 70 |
| **Weather** | | |
| 20-ft Wind Speed (upslope) | mi/h | 15 |
| Wind Adjustment Factor | | 0.5 |
| Air Temperature | oF | 90 |
| Fuel Shading from the Sun | % | 0 |
| **Terrain** | | |
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 200 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

## Village2 summer FM 4

| | | |
|---|---|---|
| Surface Rate of Spread (maximum) | 221.7 | ch/h |
| Flame Length | 34.7 | ft |
| Midflame Wind Speed (upslope) | 7.5 | mi/h |
| Max Eff Wind Exceeded? | No | |
| Spot Dist from Wind Driven Surface Fire | 0.9 | mi |
| Probability of Ignition from a Firebrand | 89 | % |

## Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village 2 FallfireFM 1 |

### Fuel/Vegetation

| | | |
|---|---|---|
| Fuel Model | | 1 |
| Mean Cover Height | ft | 1 |

### Fuel Moisture

| | | |
|---|---|---|
| 1-h Moisture | % | 2 |
| 10-h Moisture | % | |
| 100-h Moisture | % | |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | |

### Weather

| | | |
|---|---|---|
| 20-ft Wind Speed (upslope) | mi/h | 40 |
| Wind Adjustment Factor | | 0.3 |
| Air Temperature | oF | 95 |

### Terrain

| | | |
|---|---|---|
| Slope Steepness | % | 0 |
| Ridge-to-Valley Elevation Difference | ft | 0 |
| Ridge-to-Valley Horizontal Distance | mi | |
| Spotting Source Location | | |
| Fuel Shading from the Sun | % | 0 |

### Run Options

Wind direction is upslope.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

### Output Variables

Rate of Spread (maximum) (ch/h)

Flame Length (ft)

(continued on next page)

# Village 2 FallfireFM 1

| | | |
|---|---|---|
| Rate of Spread (maximum) | 665.6 | ch/h |
| Flame Length | 12.7 | ft |
| Midflame Wind Speed (upslope) | 12.0 | mi/h |
| Maximum Wind Exceeded? | Yes | |
| Spotting Distance from a Wind Driven Surface Fire | 0.9 | mi |
| Probability of Ignition from a Firebrand | 100 | % |

9 MPH

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village 2, Fallfire-FM-18 |

## Fuel/Vegetation

| | | |
|---|---|---|
| Fuel Model | | SCAL18 |
| Mean Cover Height | ft | 4 |

## Fuel Moisture

| | | |
|---|---|---|
| 1-h Moisture | % | 2 |
| 10-h Moisture | % | 2 |
| 100-h Moisture | % | 3 |
| Live Herbaceous Moisture | % | 50 |
| Live Woody Moisture | % | 50 |

## Weather

| | | |
|---|---|---|
| 20-ft Wind Speed (upslope) | mi/h | 40 |
| Wind Adjustment Factor | | 0.3 |
| Air Temperature | oF | 95 |

## Terrain

| | | |
|---|---|---|
| Slope Steepness | % | 33 |
| Ridge-to-Valley Elevation Difference | ft | 100 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |
| Fuel Shading from the Sun | % | 0 |

## Run Options

Wind direction is upslope.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

## Output Variables

Rate of Spread (maximum) (ch/h)

Flame Length (ft)

(continued on next page)

# Village 2, Fallfire-FM-18

2 MPH

| | | |
|---|---|---|
| Rate of Spread (maximum) | 134.4 | ch/h |
| Flame Length | 32.1 | ft |
| Midflame Wind Speed (upslope) | 12.0 | mi/h |
| Maximum Wind Exceeded? | No | |
| Spotting Distance from a Wind Driven Surface Fire | 1.7 | mi |
| Probability of Ignition from a Firebrand | 100 | % |

## Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village 2 fallfire Fm 3 |

### Fuel/Vegetation

| | | |
|---|---|---|
| Fuel Model | | 3 |
| Mean Cover Height | ft | 2 |

### Fuel Moisture

| | | |
|---|---|---|
| 1-h Moisture | % | 2 |
| 10-h Moisture | % | |
| 100-h Moisture | % | |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | |

### Weather

| | | |
|---|---|---|
| 20-ft Wind Speed (upslope) | mi/h | 40 |
| Wind Adjustment Factor | | 0.3 |
| Air Temperature | oF | 95 |

### Terrain

| | | |
|---|---|---|
| Slope Steepness | % | 50 |
| Ridge-to-Valley Elevation Difference | ft | 100 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |
| Fuel Shading from the Sun | % | 0 |

---

### Run Options

Wind direction is upslope.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

---

### Output Variables

Rate of Spread (maximum) (ch/h)

Flame Length (ft)

(continued on next page)

# Village 2 fallfire Fm 3

| | | |
|---|---|---|
| Rate of Spread (maximum) | 616.8 | ch/h |
| Flame Length | 32.6 | ft |
| Midflame Wind Speed (upslope) | 12.0 | mi/h |
| Maximum Wind Exceeded? | No | |
| Spotting Distance from a Wind Driven Surface Fire | 1.7 | mi |
| Probability of Ignition from a Firebrand | 100 | % |

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village 2 Fall sh7 |
| **Fuel/Vegetation, Surface/Understory** | | |
| Fuel Model | | sh7 |
| **Fuel/Vegetation, Overstory** | | |
| Canopy Height | ft | 6 |
| **Fuel Moisture** | | |
| 1-h Moisture | % | 2 |
| 10-h Moisture | % | 2 |
| 100-h Moisture | % | 3 |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | 50 |
| **Weather** | | |
| 20-ft Wind Speed (upslope) | mi/h | 40 |
| Wind Adjustment Factor | | 0.5 |
| Air Temperature | oF | 95 |
| Fuel Shading from the Sun | % | 0 |
| **Terrain** | | |
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 200 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

# Village2 Fall sh7

| | | |
|---|---|---|
| Surface Rate of Spread (maximum) | 380.5 | ch/h |
| Flame Length | 42.5 | ft |
| Midflame Wind Speed (upslope) | 20.0 | mi/h |
| Max Eff Wind Exceeded? | No | |
| Spot Dist from Wind Driven Surface Fire | 2.0 | mi |
| Probability of Ignition from a Firebrand | 100 | % |

Modules: SURFACE, SPOT, IGNITE

| | | |
|---|---|---|
| Description | | Village 2 Fall FM 4 |
| **Fuel/Vegetation, Surface/Understory** | | |
| Fuel Model | | 4 |
| **Fuel/Vegetation, Overstory** | | |
| Canopy Height | ft | 6 |
| **Fuel Moisture** | | |
| 1-h Moisture | % | 2 |
| 10-h Moisture | % | 2 |
| 100-h Moisture | % | 3 |
| Live Herbaceous Moisture | % | |
| Live Woody Moisture | % | 50 |
| **Weather** | | |
| 20-ft Wind Speed (upslope) | mi/h | 40 |
| Wind Adjustment Factor | | 0.5 |
| Air Temperature | oF | 95 |
| Fuel Shading from the Sun | % | 0 |
| **Terrain** | | |
| Slope Steepness | % | 37 |
| Ridge-to-Valley Elevation Difference | ft | 200 |
| Ridge-to-Valley Horizontal Distance | mi | 0.1 |
| Spotting Source Location | | MW |

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]

(continued on next page)

eliminate weeds, remove dead vegetation, cut grass, limb up and prune trees and shrubs, remove down and dead fuels, remove flammable under story, etc.

Q. Maintenance is also required after any storms or high winds to remove down and dead vegetation and combustible debris from properties and zones.

R. Caution must be used so as to not cause erosion or ground (including slope) instability, or excessive water runoff, due to landscaping, vegetation removal, vegetation management, maintenance, or irrigation.

**2. Recommendations for Perimeter Private Homeowners Lots at Wolf Canyon Perimeter (also recommended for all private lots)**

**The following are recommendations of the Fire Protection Consultant to homeowners for Brush Management on their private lots, for purposes of fire safety. Recommendations are also provided for construction of decks on perimeter lots adjacent to perimeter Brush Management Zones. These are not required by the Fire Department. The developer will provide a "Homeowners Guide" to homeowners regarding fire safe planting in yards.**

**Zone A on private lot: Irrigated wet zone** (0-30' or entire internal lot if less than 30'): Every structure should have a 30' "defensible space" surrounding it if 30' is available on the private lot. The objective is to prevent flames from contacting glazing, walls, and vents and to keep fire from spreading from plant to plant. The following recommendation should be implemented:

- There should be no ground cover over 18" up against house.
- Shrubs should be limited to 24" high elsewhere. Dry grass should be limited to 3".
- No flammable ornamental vegetation which can easily ignite and spread fire to structure.
- No vegetation under vents.
- No dry grass.
- No tree limbs, branches or vines within 10' of chimneys or roofs.
- Fire resistive, drought adaptive, low fuel volume, low profile, high leaf moisture, low dead to live fuel ratio, bedding plants, flowers or shrubs of 24" or less (18" where up against house) may be allowed if properly maintained and if spaced a distance between mature plants and between mature shrubs. For example, 2 times (2X) the height of the mature plant for slopes less than 20%. Shrubs should be kept out from drip line of from trees
- No red shank, chamise (adenostema), sage (salvia spp), coastal sage scrub, sagebrush, California buckwheat (eriogonum fasciculatum), manzanita (artostaphylos). Refer to Prohibited Plant List (Appendix A) of this plan.
- No flammable exotics, no cypress, juniper, acacia, eucalyptus, conifer (such as pine, cedar) palm, camphor, bottlebrush or pampas grass on any private lots. No pepper or olive trees on private lots. (and no vegetation from the Prohibited Plant List (Appendix A)of this plan).

- Single, approved, tree specimens, widely spaced, may be installed beyond 15' from structure if properly limbed (1/3 height of mature trees or 8'), pruned, maintained and configured with no dead fuel component.
- Trees should have 30' between mature canopies. The City requires each house to have a tree in front in the parkway. Such trees will be spaced and maintained to City standards.
- No plants or trees from the Prohibited Plan List (Appendix A) of this plan should be planted or remain in this zone.
- No bougainvillea unless properly maintained and spaced away from structures.
- No firewood, lumber, fuel or propane tanks within 30' of any structure. Small barbeque tank is allowed.

**<u>Zone B: Irrigated Low Fuel volume zone":</u> (31' to 100' on private lot, or to edge of private lot if less than 100').**

- Ground cover, bedding plants, shrubs and flowers to be fire resistive, drought adaptive, low profile (not over 2'), low fuel volume, high leaf moisture.
- No red shank, chamise (adenostema), sage (salvia spp), coastal sage scrub, sagebrush, California buckwheat (eriogonum fasciculatum), manzanita (artostaphylos).
- No plants shall be used listed Prohibited plant List (Appendix A) of this plan.
- No flammable exotics, no cypress, juniper, acacia, eucalyptus, conifer (such as pine, cedar) palm, camphor, bottlebrush or pampas grass on any private lots. No pepper or olive trees on private lots. Dry grass to be less than over 3".
- Irrigated grass may be over 3" high.
- Spacing of all plantings between mature plants and between mature shrubs to be the same as for Zone A of private lot.
- Limb up trees 1/3 height of mature trees or 8'.
- Trees shall be spaced 30' between mature canopies.
- Shrubs should be outside of drip line under trees.
- Break up continuous fuel beds.
- Separate, limb up, and prune all vegetation.
- Remove all down and dead fuels.
- Break up any contact between ground fuels and aerial (tree) fuels.
- Properly sized chipped biomass (1/4" to ½" diameter by 4" to 6" long by 4" deep, with no manure added) may be installed and maintained in landscaped areas 30' and beyond from any structure. The objective is to convert the vegetation to a Fuel Model 8 (slow burning, low heat release fire) and to preclude exotic grasses from regenerating. Any mulch on private lots must be kept wet.
- No vegetation from the Prohibited Plant List (Appendix A) of this plan

*Note: Decks, balconies, carports patio covers, gazebos, similar architectural appendages, unenclosed floors and roofs, and any projections from structures, on perimeter lots facing the Village 2 Wolf Canyon threat should be approved non combustible, one hour fire rated or heavy timber. The underside should be*

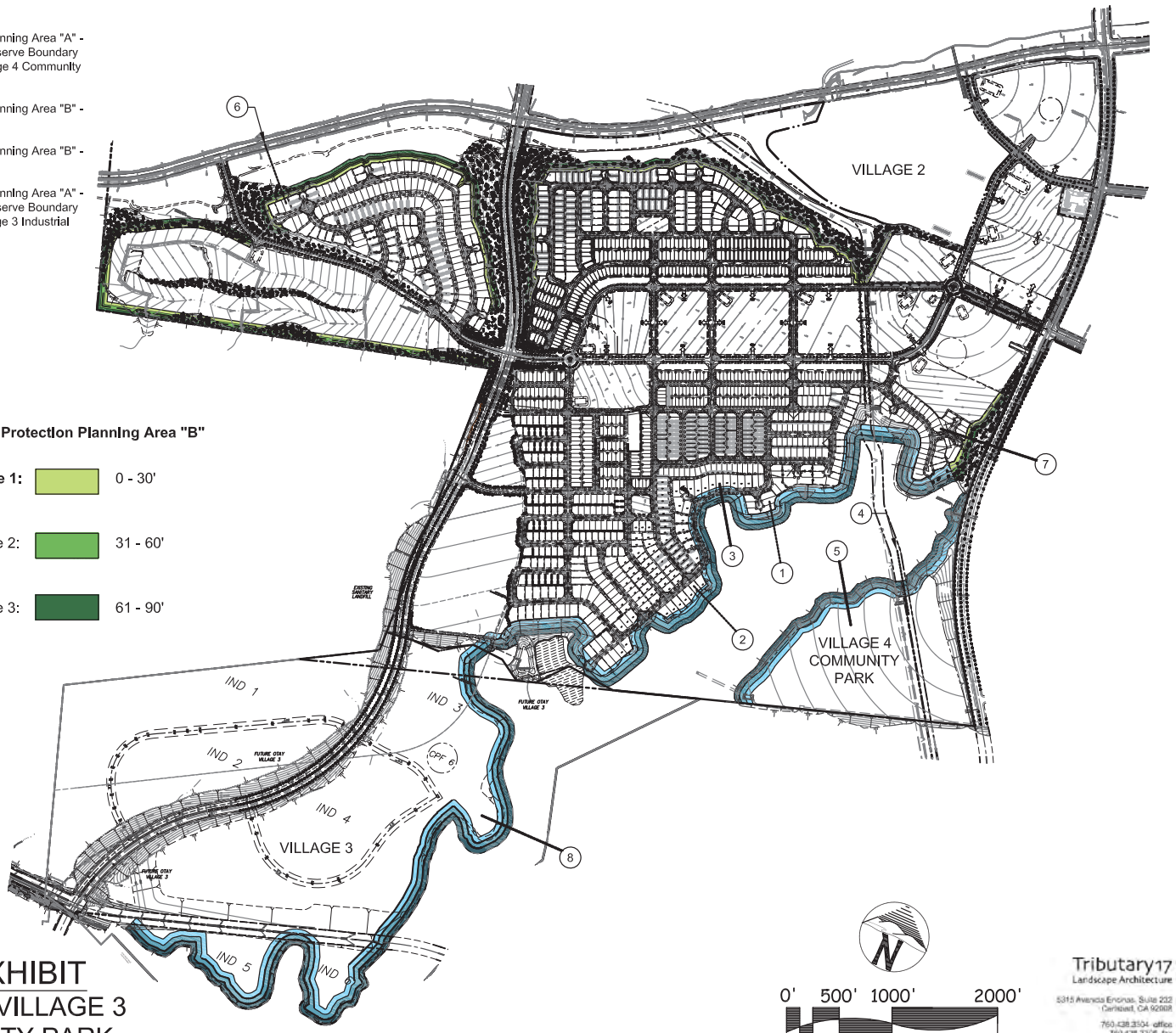
*enclosed on all sides. When such appendages are attached to exterior walls, they should be constructed to maintain the fire resistive integrity of the wall. There should be no plastic or composite decks or railings, which can melt in fire conditions or contribute to fire spread. Decks, gazebos, patios, and other ancilliary structures, should not overhang any slopes.*

SECTIONS

1. Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 1 - Village 2
2. Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 2 - Village 2
3. Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 3 - Village 2
4. Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 1 - Village 4 Community Park
5. Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 2 - Village 4 Community Park
6. Fire Protection Planning Area "B" - Olympic Parkway
7. Fire Protection Planning Area "B" - La Media Road
8. Fire Protection Planning Area "A" - Wolf Canyon, Preserve Boundary Condition 2 - Village 3 Industrial Park

## FIRE PROTECTION ZONES

| Fire Protection Planning Area "A" | | Fire Protection Planning Area "B" | |
|---|---|---|---|
| **Zone 1:** | 0 - 50' | **Zone 1:** | 0 - 30' |
| Zone 2: | 51 - 100' | Zone 2: | 31 - 60' |
| Zone 3: | 100 - 150' | Zone 3: | 61 - 90' |




# FIRE PROTECTION EXHIBIT

## OTAY RANCH VILLAGE 2, VILLAGE 3 AND VILLAGE 4 COMMUNITY PARK

N

0' 500' 1000' 2000'

28 FEB. '06


Tributary17
Landscape Architecture
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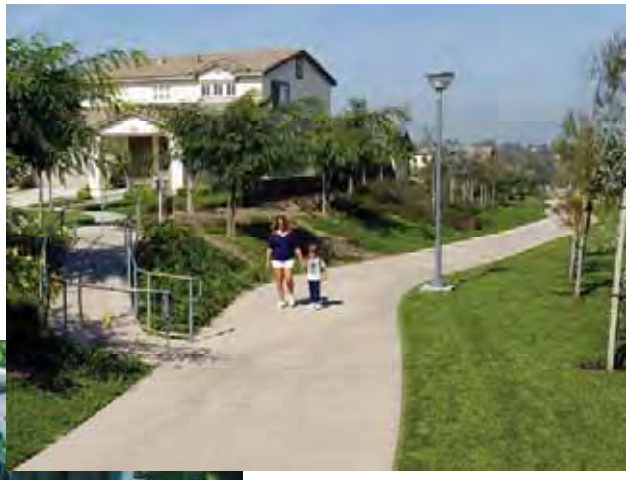
760.438.3504 office
760.438.3505 fax

# *Index of SPA Requirements*

Adopted May 23, 2006
By Resolution No. 2006-155



## INDEX TO SPA REQUIREMENTS

The GDP requires certain "Implementation Tasks" to be conducted as part of the Specific Plan process. The Implementation Tasks include preparation of Specific Plans, PFFPs, Regional Facilities Reports, Master Facilities Plans, and others. In the preparation of the first Specific Plan (SPA One) in Otay Ranch, a number of Regional and Master Facility Plans were prepared to address the provision of certain facilities on a Ranch-wide basis. For this reason, subsequent Specific Plans are required only to prepare supporting Plans and Technical Studies specific to their development. It should be noted that while the GDP requires the preparation of "Plans" at the Specific Plan level, the requirements may be fulfilled through EIR technical studies and mitigation measures, requirements established by the PFFP or descriptions in the Specific Plan instead of stand-alone "Plans."

The following Index of Specific Plan Requirements lists the Implementation Tasks required by the GDP and the Environmental Impact Report Findings of Fact (FOF) and how the requirements have been met in this Specific Plan process.

| Index to SPA Requirements | | | | |
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| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| Accessory Units | Support the use of accessory units | 243 | | Otay Ranch-Wide Affordable Housing Plan; Planned Community (PC) District Regulations |
| Acoustical Analysis | Prepare site specific acoustical analyses | | 122 | EIR technical study |
| Affirmative Fair Marketing Plan | Prepare affirmative fair marketing plan | 244 | | Otay Ranch-Wide Affordable Housing Plan; project-specific plan prior to home sales |
| Agricultural Plan | Prepare Range Management Plan/Agriculture Plan | | 99 | RMP;<br><br>SPA Agricultural Plan |
| Air Quality Plan | Prepare SP level air quality plan | 338 | 119-121 | EIR technical study & SPA Air Quality Improvement Plan |
| Animal Control Plan | Prepare SP level animal control plan | 307 | 139 | SPA Plan, Chapter VIII |
| Architectural Plans | Prepare SP level architectural plans | 115 | 23 | Village of Montecito<br><br>Otay Ranch Business Park Design Guidelines |
| Arts & Cultural Facilities | Establish design guidelines for arts & cultural facilities | 288 | | Village of Montecito Design Plan<br><br>Otay Ranch Business Park Design Guidelines |
| Bicycle Plan | Prepare SP level bicycle plan | 237 | | SPA Plan – Circulation Plan, Chapter III |
| Biological Resource Study | Prepare SP level biologic resource study | | 25-87 | EIR technical study |
| Biota Monitoring Program | Prepare biota monitoring program | 375-382 | 27-65 | RMP |

| Index to SPA Requirements | | | | |
|---|---|---|---|---|
| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| Buffering Techniques | Establish landscaping, grading, transition between land uses | | 16-17 | Village Two Design Plan<br>Otay Ranch Business Park Design Guidelines<br>SPA Preserve Edge Plan |
| Capital Facilities Plan | Prepare SP level Capital Facilities Plan | 351 | | PFFP |
| CSS & MSS Management Program | Prepare CSS & MSS Management Program | 368 | 25-27 | RMP & Phase 2 RMP |
| Cemetery Plan | Prepare SP level cemetery plan | 289 | | SPA Plan, Chapter VIII |
| Child Care Guidelines | Develop family home child care guidelines | 292 | | PC District Regulations |
| Child Care Plan | Prepare SP level child care plan | 292 | 138 | SPA Plan, Chapter VIII |
| Circulation Element | Update General Plan Circulation if needed | | 112 | Otay Ranch GDP Amendment |
| Community Purpose Facility | Identify land for community and regional purpose facility uses | 300 | | SPA Plan, Chapter VI - CPF Master Plan |
| Community Gardens | Review Community Garden Requirement | 368 | | SPA Plan Chapter V - Parks, Recreation, Open Space and Trails Plan |
| Correctional Plan | Prepare SP level correctional plan | 310 | | PFFP<br>SPA Plan, Chapter VIII |
| Criminal Activity Deterrence | Develop SP level design guidelines to deter criminal activity | 320 | | Village of Montecito Design Plan<br>Otay Ranch Business Park Design Guidelines |
| Cultural Resources Site Survey & Testing | Perform cultural resource site surveys and testing | 359 | 91-93 | EIR technical study |

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| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| Design Review Process | Identify SP level Design Review Process | 116 | 23 | Village of Montecito Design Plan<br><br>Otay Ranch Business Park Design Guidelines<br><br>PC District Regulations |
| Develop Regional Share Allocation | Develop regional share allocation | 241-242 | | Otay Ranch-Wide Affordable Housing Plan; PFFP |
| Drainage Improvement Plan | Prepare basin specific drainage improvement plan | 269 | 102 | SPA Master Drainage Plan |
| Drainage Master Plan | Prepare SP level Drainage Master Plan | 269 | 102 | SPA Master Drainage Plan |
| Edge Plan | Prepare SP level Edge Plan | 383 | | SPA Preserve Edge Plan |
| Emergency Disaster Plan | Prepare SP level Emergency Disaster Plan | 313-342 | 140 | SPA Plan, Chapter VIII |
| Emergency Medical Services Plan | Prepare SP level Emergency Medical Services Plan | 131 | 131 | SPA Plan, Chapter VIII |
| Energy Conservation | Prepare SP level Non-Renewable Energy Conservation Plan | 391 | | SPA Non-Renewable Energy Conservation Plan |
| Evacuation Routes | Determine the need for evacuation routes | | 140 | SPA Plan, Chapter VIII |
| FAA Notification | Submit land use plan for review | | 15 | EIR distribution |
| Final Resource Maps | Approve final resource maps | 386-387 | | EIR |
| Fire Management Plan | Prepare plan to protect and manage sensitive plant species | | 38 | SPA Preserve Edge Plan<br><br>Village of Montecito Design Plan<br><br>Otay Ranch Business Park |

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| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| | | | | Design Guidelines |
| Fire Protection & Emergency Medical Services Plan | Prepare SP level fire protection and emergency medical services plan | 315 | 130-131 | SPA Preserve Edge Plan (fire protection)<br><br>SPA Plan, Chapter VIII (emergency medical plan) |
| Fire Suppression Analysis | Provide SP level fire suppression analysis (sprinkler plan) | 315 | | SPA Preserve Edge Plan<br><br>Village Two Design Plan<br><br>Otay Ranch Business Park Design Guidelines |
| Fiscal Analysis | Perform fiscal analysis | 351 | | PFFP, FINE Model |
| Freeway, Segment & Intersection Capacities | Increase freeway, segment and intersection capacities | 112 | | EIR |
| Fuel Modification Plan | Prepare SP level fuel modification plan | 315 | | SPA Preserve Edge<br><br>Village of Montecito Design Plan<br><br>Otay Ranch Business Park Design Guidelines |
| Geotechnical | Prepare SP level geotechnical investigations report | 344 | 94-95 | EIR – technical study |
| Gnatcatcher & Cactus Wren Study | Perform gnatcatcher & cactus wren study | 359 | 51, 53 | RMP<br><br>EIR |
| Grading Plan | Prepare SP level grading plan | 115, 391 | 19-21 | SPA Plan, Chapter IV – Grading Plan |
| Grasslands | Perform SP level native grasslands restoration program | 370 | 28 | EIR |
| Health & Medical Plan | Prepare SP level health and medical plan | 298 | 137 | SPA Plan, Chapter VIII |
| Housing for Special Needs Groups | Identify housing opportunities for special needs groups | 244 | | Ranch-Wide Affordable Housing Program |

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| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| | | | | SPA Affordable Housing Plan |
| Housing Plan | Prepare SP level housing plan | 241-242 | | SPA Land Utilization Plan, Chapter II |
| Housing Plan, Ranch Wide | Prepare ranch-wide housing plan | 391 | | Ranch-Wide Affordable Housing Plan |
| Hydrologic Study | Prepare hydrologic study to determine water flow, drainage impacts | | 37, 40, 102 | EIR<br><br>SPA Master Drainage Plan |
| Inventory Facilities | Inventory existing and proposed facilities | 351 | | PFFP |
| Justice Plan | Prepare SP level justice plan | 317 | | SPA Plan, Chapter VIII |
| Landscaping Plan | Prepare SP level landscaping plan | 115 | 16 | Village of Montecito Design Plan<br><br>Otay Ranch Business Park Design Guidelines |
| Law Enforcement Plan | Prepare SP level law enforcement plan | 320 | 129 | SPA Plan, Chapter VIII |
| Library Plan | Prepare SP level library plan | 324 | 133 | SPA Plan, Chapter VIII |
| Memorial Garden | Determine desirability of memorial garden | 289 | | SPA Plan, Chapter VIII |
| Mitigation Activities Feasibility | Demonstrate financial feasibility of mitigation activities | 379 | | EIR |
| Nature Interpretive Center | Identify potential nature interpretive center sites | 378-79 | | RMP |
| Noise Study | Prepare SP level noise study | 340 | 16, 122 | EIR |
| Overall Design Plan | Prepare Overall Design Plan | 114-117 | | Otay Ranch Overall Design Plan |
| Paleontological Resources | Prepare SP Level Paleontological Resources | | 96-97 | EIR |

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|---|---|---|---|---|
| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| Mitigation Plan | Mitigation Plan | | | |
| Parks Master Plan | Prepare SP level Parks Master Plan | 255 | 134-135 | SPA Plan, Chapter V - Parks, Recreation, Open Space & Trails Plan |
| Phasing Plan | Prepare SP level Phasing Plan | 351 | | SPA Plan, Chapter VII |
| Planned Community Regulations | Prepare SP level Planned Community Regulations | | | PC District Regulations |
| Preserve Conveyance Schedule | Identify conveyance schedule | 376 | | RMP |
| Preserve Funding Plan | Prepare Preserve Funding Plan | 383 | | RMP |
| Preserve Infrastructure Plan | Prepare Preserve Infrastructure Plan | 383 | | RMP |
| Preserve Owner Manager | Identify Preserve Owner Manager | 372 | | RMP |
| Preserve Permitted Use Plan | Prepare Preserve Permitted Use Plan | 380 | | RMP |
| PFFP | Prepare SP level PFFP | 351 | 125, 127, 131-135 | PFFP |
| Range Management Plan | Prepare Range Management Plan/Agricultural Plan | 385-398 | | RMP |
| Raptor Study | Prepare raptor study | 359 | | RMP |
| Reclaimed Water Uses & Restrictions | Identify reclaimed water uses and restrictions | | 125 | SPA Water Master Plan |
| Recreation Access Plan | Prepare recreation access plan | | 134 | RMP |
| Recreation Master Plan | Prepare SP level recreation master plan | 255 | | SPA Plan, Chapter V - Parks, Recreation, Open Space & Trails Plan |

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| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| Regional Purpose Facility Plan | Identify land for community and regional purpose facility use | 300 | | SPA Plan, Chapter VIII |
| Resource Agencies | Consult with resource agencies | 385 | | RMP |
| Resource Management Plan Implementation | Implement requirements of RMP | | 25 | EIR<br><br>SPA Preserve Edge Plan & Agricultural Management Plan |
| River Valley Management | Evaluate Otay River Valley Management | 379 | | RMP |
| RMP Amendments | Develop regulatory framework for RMP amendments | 385 | | RMP |
| School Facilities Financing | Provide school facilities financing program | 328 | | PFFP |
| School Financing Agreement | Negotiate school financing agreement | 328 | | PFFP; Separate Agreement with School District |
| School Plan | Prepare SP level school plan | 328 | 132 | SPA Land Utilization Plan, Chapter II; PFFP |
| Sewer Master Plan | Prepare SP level sewer master plan | 272 | 127 | SPA Sewer Master Plan |
| Social & Senior Services Plan | Prepare SP level social and senior services plan | 304 | 137 | SPA Plan, Chapter VIII |
| Solid Waste Management Plan | Prepare SP level integrated solid waste management plan | 276 | 128 | SPA Plan, Chapter VIII |
| Street Standards | Prepare SP level standards for public and private streets | 114 | | SPA Plan, Chapter III - Circulation Plan |
| Traffic Control Strategies | Implement traffic control strategies | | 112 | EIR<br><br>SPA Plan, Chapter III - Circulation Plan |
| Trail Plan | Prepare SP level phased | 237 | | SPA Plan, Chapter V - Parks, Recreation, Open |

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| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| | trail plan | | | Space & Trails Plan |
| Transportation Demand Management (TDM) Strategies | Provide transportation demand management (TDM) strategies | | 112 | EIR |
| Transportation Model Analysis | Perform buildout transportation model analysis | 237 | 107-109 | EIR |
| Transportation Phasing Plan | Provide transportation phasing plans | | 112 | EIR; PFFP |
| Urban Runoff Plan | Prepare urban runoff plan | 278 | 107-109 | SPA Drainage Plan |
| Vernal Pool Management Plan | Prepare vernal pool management plan | 365 | 29, 58, 60 | RMP |
| Vernal Pool Study | Prepare vernal pool study | 359 | 29 | RMP; EIR |
| Village Design Plan | Prepare village design plan | 114-116 | 23-25 | Village of Montecito Design Plan<br><br>Otay Ranch Business Park Design Guidelines |
| Village Phasing Plan | Update village phasing plan | 114-116 | | SPA Plan, Chapter VII<br><br>PFFP |
| Visual Study | Prepare SP level visual study | 116 | 22-25 | EIR |
| Water Conservation Plan | Prepare SP level water conservation plan | 282, 394 | 125 | SPA Water Conservation Plan |
| Water Master Plan | Prepare SP level water master plan | 284 | 125 | SPA Water Plan |
| Water Reclamation Plan | Prepare watershed impact and protection reports | 278 | 109 | SPA Master Drainage Plan<br><br>EIR |
| Watershed Impact & Protection | Prepare watershed impact and protection reports | 278 | 109 | SPA Master Drainage Plan |

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|---|---|---|---|---|
| **Topic** | **Task/Requirement** | **GDP** | **Findings of Fact** | **Performance** |
| Wetland Delineation | Perform SP level wetland delineation | 366 | | EIR |
| Wildlife Corridor Study | Prepare wildlife corridor study | 359 | 87 | RMP |
| Wildlife Corridor Study | Implement wildlife corridor study | 371 | 87, 90 | EIR |

# *Preserve Edge Plan*

Adopted: May 23, 2006

Photo Source: Dudek & Associates

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# EXHIBIT LIST

## A. INTRODUCTION

The purpose of the Preserve Edge Plan is to identify allowable uses within appropriate land use designations for areas adjacent to the Otay Ranch Preserve. In accordance with Policy 7.2 of the Otay Ranch Resource Management Plan, a Preserve Edge Plan is to be developed for all SPAs that contain areas adjacent to the Preserve. The Preserve Edge Plan area is a public or privately owned 100-foot wide strip of land adjacent to the Preserve. To provide further guidance relating to the content of the Preserve Edge Plan, the Chula Vista MSCP Subarea Plan contains policies related to land use adjacency. RMP and MSCP policies are summarized and evaluated below.

## B. COMPLIANCE WITH RMP/MSCP SUBAREA PLAN POLICIES

The following discussion provides a description of policies identified in the Chula Vista MSCP Subarea Plan, which were developed in consideration of the requirements of the RMP, as well as compliance measures to be carried out by the various components of the SPA Plan. The discussion is divided into edge effect issue areas identified in the Subarea Plan.

### 1. Drainage

*MSCP Policy:*

"All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the Preserve. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. These systems should be maintained approximately once a year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, removing exotic plant materials, and adding chemical-neutralizing compounds (e.g., clay compounds) when necessary and appropriate." (Page 7-25)

*Compliance:*

Development of the site would reduce natural erosion and sedimentation potential through the increase in impervious surfaces. However, erosion potential would exist at the locations where runoff is ultimately released from the Plan area. To avoid erosion impacts, the project has been designed to include energy dissipation structures to reduce runoff flow velocities to below erosive velocity limits.

Post-construction BMPs are included in the design of the SPA Plan area. The BMP facilities, designed to divert 85$^{th}$ percentile runoff rate volume (defined by San Diego Regional Water Quality Control Board Order No. 2000-01 as the runoff generated from the 85$^{th}$ percentile, 24-hour rainfall event), to the proposed treatment train system summarized below.

As fully described in the Master Drainage Study for Otay Ranch Villages 2, 3 & 4 dated July 14, 2005, and the Water Quality Technical Report for Otay Ranch Village 2, 3 and 4 dated October 28, 2005 prepared by Hunsaker & Associates, two basins have been proposed to mitigate peak design flows to below pre-development levels, as described below:

- The majority of runoff will be routed through a proposed detention basin located south of neighborhood R-21, in the unnamed tributary just upstream of its confluence with Wolf Canyon Creek.
- All runoff from Village 3 will be routed via storm drain to the intersection of Heritage Road and Main Street/Rock Mountain Rd. A detention basin located near the intersection of Heritage Road and Main Street/Rock Mountain Road. This basin will detain developed condition flows from the Otay Ranch Business Park and Flat Rock Company parcels to the south of Main Street/Rock Mountain Road to below predevelopment levels prior to discharging to the Otay River.

As fully described in the *Water Quality Technical Report for Otay Ranch Villages 2, 3, and 4 dated October 28, 2005,* prepared by Hunsaker & Associates, flow-based BMPs will be provided in the locations described below.

The proposed Best Management Practices ("BMP") treatment train system will reduce project pollutant to the maximum extent practicable prior to discharge to the Wolf Canyon Preserve.

Dry weather flows and 85th percentile (first flush) flows will be diverted from the main storm drain system for treatment via a diversion weir or offset invert. These diversion structures will be designed to guarantee that flows from the entire 85th percentile runoff event are treated.

Per standards set forth by the San Diego County Regional Water Quality Control Board, only flows from the 85th percentile first flush event are required to be treated. Urban pollutants, which accumulate in urban drainage conveyance systems in the absence of runoff, are displaced and transported downstream by the first flush event. After the first flush event, it is assumed that the accumulated pollutants have been moved downstream. Thus, flows in excess of the first flush event are assumed to convey clean water and are allowed to bypass the storm water treatment system.

Primary treatment will be provided by a Vortechs separator system, which will treat all dry weather and 85th percentile flows and will provide high removal efficiencies for total suspended solids, oil, grease, trash, and debris from the treated runoff.

Following primary treatment, all dry weather flows and a portion of the first flush flow (roughly the first 1/3 of the 85th percentile storm) will receive secondary treatment in a StormFilter treatment system. This secondary BMP will provide additional high-level treatment for additional project pollutants (nutrients, heavy metals, colloidal materials) not fully treated by the Vortechs system.

Finally, dry weather, first flush and high flows from the southern portion of Village 2 will pass through the vegetated Wolf Canyon peak flow attenuation detention basin prior to discharge to the Preserve. Tertiary treatment would be provided as dry weather and 85th percentile flows route through the vegetated basin bottom. Due to the large 85$^{th}$ percentile flows to the treatment units for Village 2 south and Village 3, custom designed units will be provided.

- A Vortech treatment unit and a StormFilter unit will be located in the southwest corner of the Village Four Community Park site to treat flows from the community park prior to discharging to Wolf Canyon Creek.
- A Vortech treatment unit and a StormFilter unit will be located south of neighborhood R-21 to treat flows from the southern area of Village 2 prior to discharging to Wolf Canyon Creek.
- A Vortech treatment unit and a StormFilter unit will be located north of the intersection of Heritage Road and Main Street/Rock Mountain Road to treat flows from the Otay Ranch Business Park (Village 3) prior to discharging to the Otay River.
- A Vortech treatment unit and a StormFilter unit will be located in Main Street/Rock Mountain Road to treat flows from the portion of Village Three owned by the Otay Land Company south of Main Street/Rock Mountain Road prior to discharging to the Otay River.

The final design for the SPA Plan drainage is required to demonstrate the following:

- Detention and storm water treatment facilities shall treat dry-weather flows and 85$^{th}$ percentile runoff;
- Each inlet, outlet, interceptor, concentration or confluence point, shall be demonstrated to handle the peak runoff for post-development conditions;
- The proposed system shall be integrated with existing and proposed downstream drainage facilities to effectively control flows within the entire system;
- Main lines and detention/desilting facilities shall be designed pursuant to Section 3-202-1 of the Chula Vista Subdivision Manual.

The water quality/detention facilities are shown in Exhibit 1. In addition to the water quality units, the RWQCB regulations require that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for development within the SPA Plan area. The SWPPP would address water quality impacts associated with construction and operation of the project. To mitigate impacts from "first flush" runoff and flow, all BMPs identified in the SWPPP would be implemented. The SWPPP will be consistent with the requirements of the federal Clean Water Act and the BMPs of the RWQCB. BMPs identified in the SWPPP will include, but are not limited to the following:

*Construction- Related Measures:*

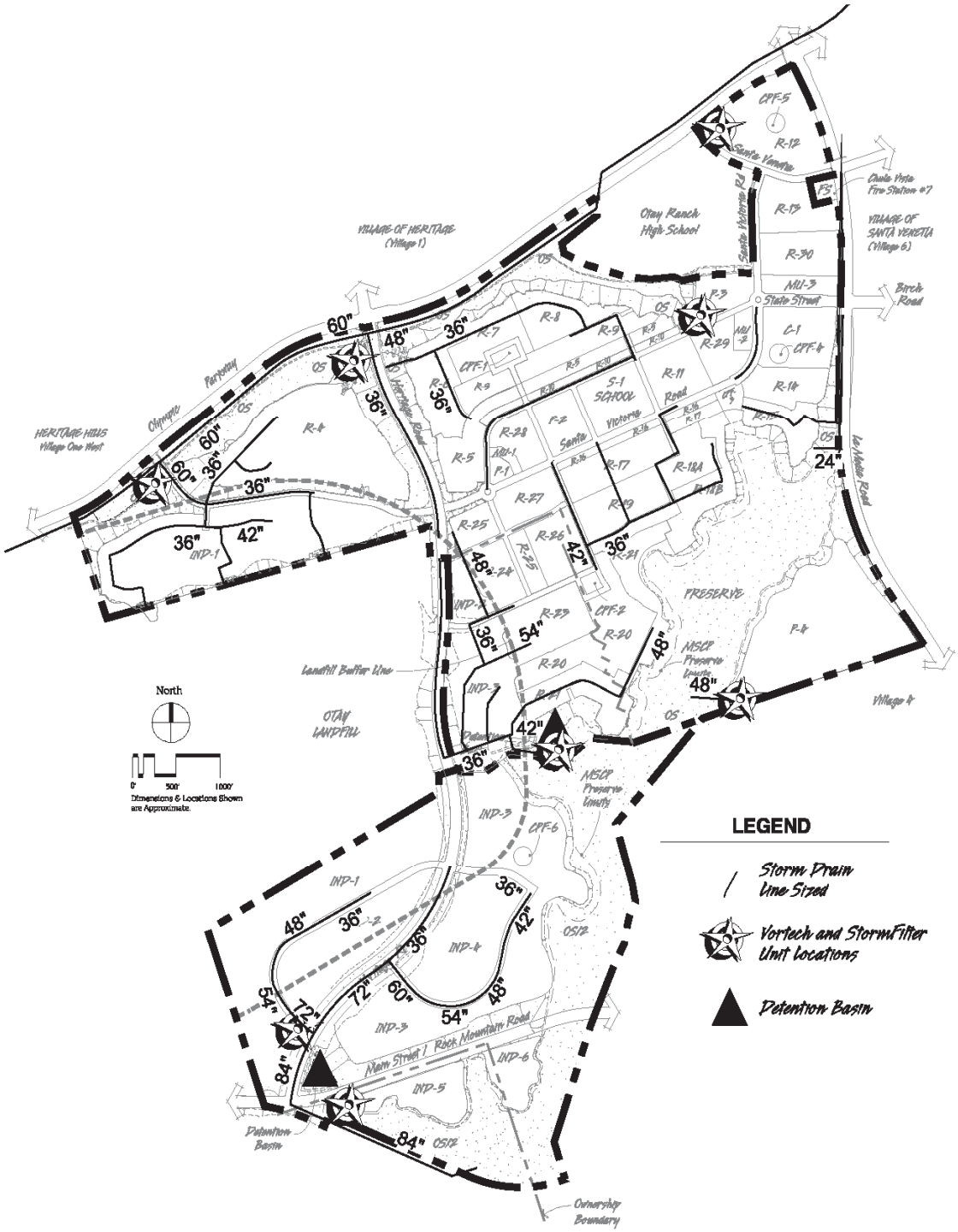
- Existing vegetation will be retained where possible. To the extent feasible, grading activities will be limited to the immediate area required for construction.
- Temporary erosion control measures will be employed for disturbed areas.
- No disturbed surfaces will be left without erosion control measures in place from October 1 through April 1.

*Design/Post-Construction Measures:*

- Sediment will be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- Where deemed necessary, storm drains will be equipped with silt and oil traps to remove oils, debris and other pollutants. Storm drain inlets shall be labeled "No Dumping-Drains to Ocean." Storm drains shall be regularly maintained to ensure their effectiveness.
- The parking lots will be designed to allow storm water runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants.
- Permanent energy dissipation structures will be installed for each drainage outfall to a natural watercourse.
- The project area drainage basins will be designed to provide effective water quality control measures. Design and operational features of the drainage basins will include design features to provide maximum detention time for settling of fine particles; maximize the distance between basin inlets and outlets to reduce velocities; and establish maintenance schedules for periodic removal of sedimentation, excessive vegetation and debris.

In addition to the permanent drainage facilities, temporary desiltation basins to control construction related water quality impacts would be constructed within the Plan area with each grading phase to control sedimentation during construction. The interim desiltation basins would be designed to prevent discharge of sediment from the project grading operations into the natural drainage channel and would incorporate water quality control features to comply with Regional Water Quality Control Board 401 Certification requirements. The exact size, location and component elements of these interim basins would be identified on the grading plans.

**Exhibit I - Water Quality/Detention Facilities**



### 2. Toxic Substances

*MSCP Policy:*

"All agricultural uses, including animal-keeping activities, and recreational uses that use chemicals or general by-products such as manure, potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate methods on their site to reduce impacts caused by the application and/or drainage of such materials into the Preserve. Methods shall be consistent with requirements requested by the Regional Water Quality Control Board (RWQCB) and National Pollution Discharge Elimination System Permit (NPDES)." (Page 7-26)

*Compliance:*

The SPA Plan area would phase out agricultural uses adjacent to the Preserve, consistent with the SPA Plan Agricultural Plan. Current agricultural activities on the site consist of dry-farming and cattle grazing. The dry-farming practiced on the site does not involve the use of fertilizers or pesticides.

### 3. Lighting

*MSCP Policy:*

"Lighting of all developed areas adjacent to the Preserve should be directed away from the Preserve, wherever feasible and consistent with public safety. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the Preserve and sensitive species from night lighting. Consideration should be given to the use of low-pressure sodium lighting." (Page 7-26)

*Compliance:*

The Montecito Design Plan and the Otay Ranch Business Park Design Guidelines include criteria for the design of lighting for the villages and surrounding streets. Improvement plans for the village and streets will include shielded lighting designs that avoid spillover light in the Preserve. Lighting Plans and a photometric analysis shall be prepared to illustrate the location of proposed lighting standards and type of shielding measures.

### 4. Noise

*MSCP Policy:*

"Uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy uses or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species.

Where noise associated with clearing, grading or grubbing will negatively impact an occupied nest for the least Bell's vireo during the breeding season

from March 15 to September 15, noise levels should not exceed 60 CNEL. However, on a case by case basis, if warranted, a more restrictive standard may be used. If an occupied least Bell's vireo nest is identified in a pre-construction survey, noise reduction techniques, such as temporary noise walls or berms, shall be incorporated into the construction plans to reduce noise levels below 60 CNEL.

Where noise associated with clearing, grubbing or grading will negatively impact, an occupied nest for raptors between January 15-July 31 or the California gnatcatcher between February 15 and August 15 (during the breeding season), clearing, grubbing or grading activities will be modified if necessary, to prevent noise from negatively impacting the breeding success of the pair. If an occupied raptor or California gnatcatcher nest is identified in a pre-construction survey, noise reduction techniques shall be incorporated into the construction plans. Outside the bird breeding season(s) no restrictions shall be placed on temporary construction, noise." (Page 7-26)

*Compliance:*

Requirements placed on the project by the EIR include pre-grading surveys for gnatcatchers, vireos and nesting raptors. Based on those surveys and locations of nesting birds in the year of grading, if it is determined that the noise impact thresholds established in the Chula Vista Subarea Plan would be exceeded, the applicant would be required to reduce the impact below the designated threshold through either modification of construction activities or avoiding clearing, grubbing, grading or construction activities within 500 feet of an occupied nest site.

### 5. Invasives

*MSCP Policy:*

"No invasive non-native plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve should be planted with native species that reflect the adjacent native habitat. The plant list contained in the "Wildland / Urban Interface: Fuel Modification Standards," and provided as Appendix L of the Subarea Plan, must be reviewed and utilized to the maximum extent practicable when developing landscaping plans in areas adjacent to the Preserve. (Page 7-27)

*Compliance:*

Landscape adjacent to the Preserve will not contain any invasive species, as determined by the City of Chula Vista. The following list provides species to be planted on manufactured slopes adjacent to the Preserve boundary. This list also meets the requirements outlined in the Fire Protection Plan as these manufactured slopes are also within the 150' Brush Management Zone required by the MSCP Subarea Plan. Any changes to the plant species listed below must be approved by the Director of Planning and Building. The area may be planted with container stock (liners) or a hydroseed mix.

| *Common Name* | *Scientific Name* |
|---|---|
| Toyon* | Heteromeles arbutifolia |
| Bladderpod* | Isomeris arborea |
| <no common name>* | Lycium andersonii |
| Hollyleaf cherry* | Prunis ilicifolia |
| Red berry* | Rhamnus crocea |
| Fuchsia flowering gooseberry* | Ribes speciosum |
| Goatnut* | Simmondsia chinensis |
| Bush sunflower | Encelia Californica |
| Golden yarrow | Eriophyllum confertiflorum |
| Common tarplant | Hemizonia fasciculata |
| Arroyo lupine | Lupinus succulentus |
| Purple needlegrass | Nassella pulchra |
| Blue eyed grass | Sisyrinchium bellum |
| Coast cholla | Opuntia prolifera |
| Coast prickly pear | Opuntia littoralis |
| <no common name> | Opuntia oricola |
| Snake cholla | Cylindropuntia californica var. californica |
| Mohave yucca | Yucca schidigera |
| Salt grass | Distichlis spicata |
| Our Lord's candle | Yucca whipplei |
| San Diego sunflower | Viguiera laciniata |

*Containers only, others can be hydroseeded

**6. Buffers**

*MSCP Policy:*

"There shall be no requirements for buffers outside the Preserve, except as may be required for wetlands pursuant to Federal and/or State permits, or by local agency CEQA mitigation conditions. All open space requirements for the Preserve shall be incorporated into the Preserve. Fuel modification zones must be consistent with Section 7.4.4 of the Subarea Plan."

*Compliance:*

Fuel modification zones have been incorporated into the proposed development areas of the SPA Plan pursuant to the requirements of the Subarea Plan. Where appropriate, graded landscaped slope areas will be maintained pursuant to Fire Department requirements and will be outside of

the Preserve. A Fire Protection Plan; Otay Ranch Villages 2, 3 and a portion of 4 has been prepared that provides specific fuel modification requirements for the entire SPA area. Consistent with the Chula Vista MSCP requirements, a 150' Brush Management Zone has been established adjacent to the preserve. A description of this Brush Management Zone is provided below and shown in Exhibit 2.

*Brush Management Zones:*

*Zone 1:*

- 0' – 50'
- Irrigated
- The plant height requirements shall be:

75% of the plant material may not exceed 18" in height

25% of the plant material may not exceed 24" in height

Randomly place CVFD approved succulent type plant material may exceed the height requirements, provided that they are spaced in groups of no more than three and a minimum of five feet away from described "clear access routes".

*Zone 2:*

- 51' – 100'
- Temporary above-ground irrigation permitted during plant establishment period.
- The plant height requirements shall be:

75% of the plant material may not exceed 36" in height

25% of the plant material may not exceed 48" in height

Randomly place CVFD approved succulent type plant material may exceed the height requirements, provided that they are spaced in groups of no more than five and a minimum of five feet away from described "clear access routes".

*Zone 3:*

- 101' – 150'
- Temporary above-ground irrigation permitted during plant establishment period.
- The plant height requirements shall be:

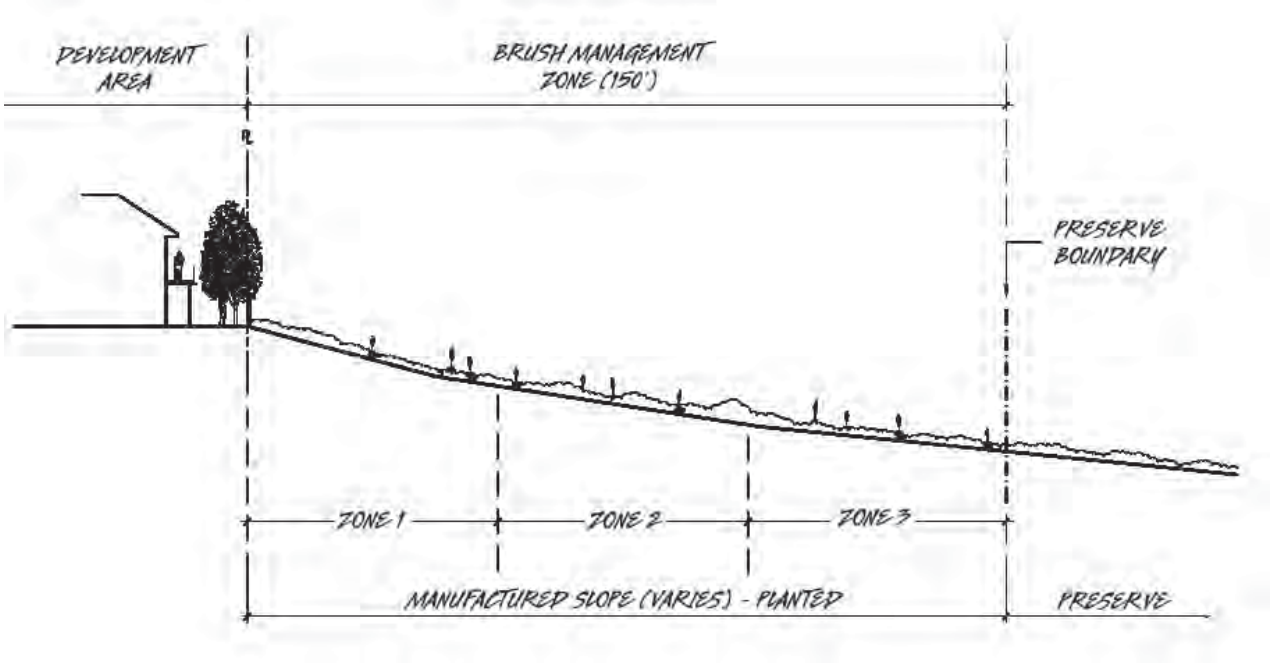
75% of the plant material may not exceed 36" in height

25% of the plant material may not exceed 48" in height

Randomly place CVFD approved succulent type plant material may exceed the height requirements, provided that they are

spaced in groups of no more than nine and a minimum of five feet away from described "clear access routes".

**Exhibit 2 - Wolf Canyon Village Perimeter**




A more detailed description of the Brush Management Zone, including maintenance activities, planting programs, etc. is provided in the Fire Protection Plan; Otay Ranch Villages 2, 3 and a portion of 4. Any proposed changes in the Brush Management Zone are subject to approval by the Chula Vista Director of Planning and Building and the Chula Vista Fire Chief.

The 100' preserve edge is included within the 150' Brush Management Zone. Where the edge condition involves streets and/or front yard areas adjacent to Preserve areas, hard surface and irrigated landscaped areas would serve as wildland fire buffers, in accordance with any specific requirements of the Fire Protection Plan.

The irrigation design proposed for the preserve edge in Wolf Canyon/Village 2, 3 and 4 (portion) includes permanent irrigation within Brush Management Zone 1 (0-50 feet) and temporary irrigation in Zones 2 and 3 to ensure the establishment of vegetation intended to stabilize the slope and minimize erosion. The temporary irrigation is described below:

Zone 2 (51 – 100 feet) would be irrigated with above ground irrigation lines and only during plant establishment using sprinkler heads that spray 360

degrees. When the plants have become established, the sprinkler heads will be adjusted to spray only 180 degrees toward the upper 50 feet of the slope.

Zone 3 (101 – 150 feet) will also be irrigated to ensure the establishment of vegetation intended to stabilize the slopes and minimize erosion. Irrigation in this zone will also be irrigated with above ground irrigation lines that would be completely removed upon plant establishment.

If properly managed, the temporary irrigation of brush management Zones 2 and 3 as described above, does not conflict with the Adjacency Management Issues found in Section 7.5.2 of the City of Chula Vista MSCP Subarea Plan.

*MSCP Adjacency Guidelines*

All new development must adhere to the Adjacency Guidelines for drainage found on Page 7-25 of the Subarea Plan. In summary, the guidelines state that:

1. All developed areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the Preserve.
2. Develop and implement urban runoff and drainage plans which will create the least impact practicable for all development adjacent to the Preserve.
3. All development located within or directly adjacent to or discharging directly to an environmentally sensitive area are required to implement site design, source control, and treatment control Best Management Practices (BMPs).

To adhere to these MSCP guidelines, excessive runoff into the Preserve from adjacent irrigated slopes must be prevented. Erosion control BMPs must be installed prior to planting and watering to prevent siltation into the Preserve. The irrigation system installed on the slopes should have an automatic shutoff valve to prevent erosion in the event the pipes break. Irrigation schedules for the slopes adjacent to Wolf Canyon must be evaluated and tested in the field to determine the appropriate water duration and adjusted, as necessary, to prevent excessive runoff.

In addition, a manual weeding program or the focused application of glyphosate shall be implemented on the manufactured slopes adjacent to the Wolf Canyon portion of the Preserve to control weeds that are likely to be encouraged by irrigation. Weed control efforts should occur quarterly or as needed, to prevent weeds on the manufactured slopes from moving into the adjacent Preserve. A qualified monitor shall check the irrigated slopes during plant establishment to verify that excessive runoff does not occur and that any weed infestations are controlled.

**7. Restrict Access**

Both the Otay Ranch RMP and Chula Vista MSCP Subarea Plan contain policies that restrict or limit access into the Preserve. These policies are discussed below:

Policy 6.5 of the Otay Ranch Resource Management Plan states the following:

"Identify restricted use areas within the Preserve."

*Standard:* Public access may be restricted within and adjacent to wetlands, vernal pools, restoration areas, and sensitive wildlife habitat (e.g., during breeding season) at the discretion of the Preserve Owner/Manager.

*Guidelines:*

1. The Preserve Owner/Manager shall be responsible for identifying and designating restricted areas based on biological sensitivity…"

*MSCP Policy:*

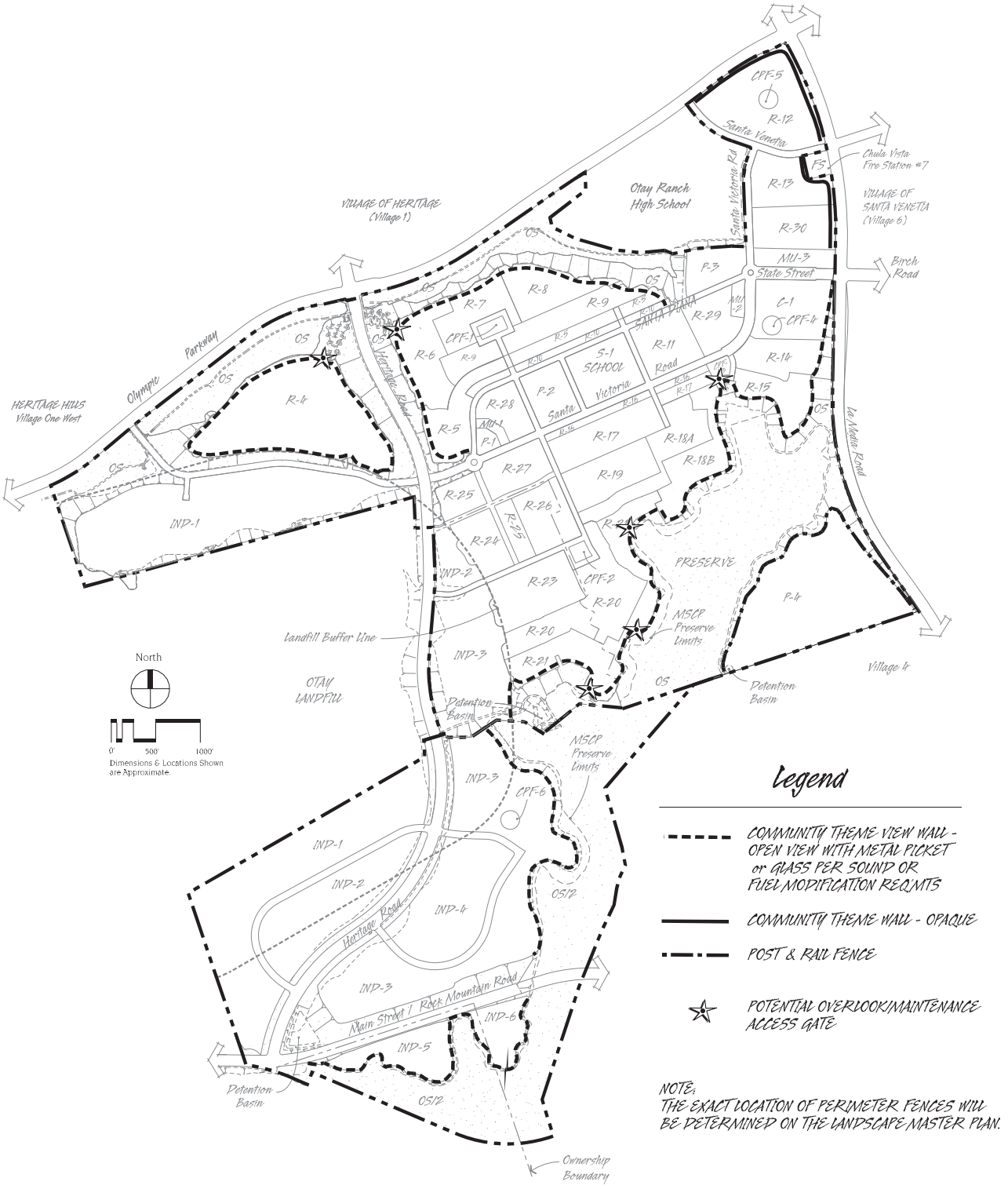
"The public access to finger canyons will be limited through subdivision design, fencing or other appropriate barriers, and signage."

"Install barriers (fencing, rocks/boulders, appropriate vegetation) and/or signage in new communities where necessary to direct public access to appropriate locations."

*Compliance:*

Pursuant to the requirements of the MSCP Subarea Plan and RMP, the Villages 2, 3 and a portion of 4 land plans have been designed to limit access to the adjacent Wolf Canyon preserve area. The subdivision does not provide public trail access connecting the subdivision to the preserve and the trail within Wolf Canyon proposed in the adopted Chula Vista Greenbelt Master Plan has been eliminated. The SPA Plan, Village Design Plan and Business Park Guidelines provide Wall and Fence Plans for both Villages 2 and 3. View fencing/walls along the Wolf Canyon edge will be provided outside the Preserve, within the Brush Management Zone. This property will be maintained by the City of Chula Vista, with maintenance funded through an open space maintenance district. Access to the Brush Management Zone will be provided via locked gates for maintenance and fire protection activities only. The conceptual location of perimeter fencing is depicted in Exhibit 3. The exact location and type of all proposed fencing will be depicted on the overall Village 2 and Village 3 Landscape Master Plans and will be subject to review and approval by the Director of Planning and Building. Signage, identifying the MSCP Preserve and notifying the public of access restrictions, will be provided at key locations along the Wolf Canyon edge. The detailed sign design will be provided on the Village 2 and Village 3 Landscape Master Plans and will be subject to review and approval by the Director of Planning and Building, and the Director of General Services or designee.

**Exhibit 3 - Wall and Fence Concept**



# *Agricultural Plan*

Adopted May 23, 2006
By Resolution No. 2006-155

## INTRODUCTION

The 1993 Otay Ranch Program EIR requires the preparation of an agriculture plan concurrent with the approval of any SPA affecting onsite agricultural resources. The Findings of Fact state that the agricultural plan shall indicate the type of agriculture activity being allowed as an interim use including buffering guidelines designed to prevent potential land use interface impacts related to noise, odors, dust, insects, rodents and chemicals that may accompany agricultural activities and operations.

Historical agricultural uses in the Village of Montecito and Otay Ranch Business Park "Project Area," include dry farming, as well as cattle and sheep raising. Crop production was limited to “dry farming” of hay and grains due to limited water availability. Cultivation and cattle grazing activities are permitted in the Project Area. Cattle grazing is no longer occurring on the property. However, cultivation will continue until the property is developed.

## PHASED ELIMINATION OF AGRICULTURAL USES

*Farming*

Land utilized for agricultural activities in properties surrounding the Project Area has decreased in recent years. Factors that have led to the decrease in agricultural use include the conversion of farmland into urban uses as a result of increases in property taxes and the high cost of importing water. The phased development of the Project Area incrementally converts agriculture uses to urban development. Consistent with the Otay Ranch GDP, the following agricultural standards will be employed:

- A 200-foot distance buffer shall be maintained between developed property and ongoing agricultural operations. Use of pesticides shall comply with federal, state and local regulations.
- In those areas where pesticides are to be applied, vegetation shall be utilized to shield adjacent urban development (within 400 feet) from agricultural activities.
- The applicant shall notify adjacent property owners of potential pesticide application through advertisements in newspapers of general circulation.
- Where necessary to ensure the safety of area residents, appropriate fencing shall be utilized.

*Grazing*

The Otay Ranch RMP includes a Range Management Plan. The purpose of the Range Management Plan is to provide a framework for the coordinated control of grazing within the Otay Ranch Preserve. Grazing no longer occurs within the Project Area.